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JANUARY - FEBRUARY, 1951

A Magazine for Mineralogists, Geologists and Collectors

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Official Journal of the Rocks and Minerals Association

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Science Direct

ROCKS and MINERALS

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January-February 1951

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CHIPS FROM THE QUARRY

WHY THE NOV.-DEC. ISSUE WAS LATE

The Nov.-Dec., 1950, issue of ROCKS AND MINERALS came out on December 6th. We had hopes of getting it out by November 22nd but unfortunately our printers were swamped with work and just could not give the magazine their best attention.

On Saturday, November 25th, a most severe rain-wind storm (a hurricane) hit the Eastern Seaboard and which so paralyzed traffic, (damaged homes, buildings, etc) that it took over a week for conditions to become normal again. In Peekskill, alone, the damage was great and some homes were without heat, electricity and telephone service for over a week.

No sooner was the Nov.-Dec. issue mailed than a railroad strike took place in the Middle West and then extended eastward towards Washington, D. C. We are very sure that many bundles of ROCKS AND MINERALS were held up by the railroad and not sent through until after the strike was over.

By the time the strike was over, the heavy Christmas rush set in which further delayed the delivery of ROCKS AND MINERALS. When a heavy Christmas rush is on, the first class mail, cards and packages receive the main attention—magazines often are set to one side and allowed to stay there for days until after the rush is over and then they are sorted out and delivered to subscribers. At times magazines are held up two weeks or longer in a post office—in the meantime subscribers in that town send us frantic letters about not receiving their copies and demanding that they be sent right away. If other copies are sent, they would meet the same fate as the first ones—unless sent first class which would be a heavy expense to us.

DR. SPENCER'S REMARKABLE RECORD

In October, 1950, Dr. Leonard J. Spencer completed 50 years as Editor of the MINERALOGICAL MAGAZINE, one of England's famous periodicals, and the official Journal of the Mineralogical Society of Great Britain. The December, 1950, issue of the MINERALOGICAL MAGAZINE will be a special number in honor of Dr. Spencer.

Fifty years of service in any branch of industry or science is a notable achievement but to devote this length of service towards editing a mineralogical magazine is a most unusual but highly commendable duty. ROCKS AND MINERALS, its Editor and staff and all subscribers and advertisers, extend to Dr. Spencer Congratulations and Best Wishes!

Dr. Spencer, one of the world's most distinguished mineralogists, a former Keeper of Minerals at the British Museum, and author of numerous papers and books on minerals, has always been most friendly to ROCKS AND MINERALS, and gave freely of his time in furnishing notes or in offering suggestions and advice. To his wise counsel and advice, the Editor of ROCKS AND MINERALS will always be grateful.

The Editor of ROCKS AND MINERALS is a member of the Mineralogical Society of Great Britain, of which Dr. Spencer is a past-president.

ROCKS and MINERALS

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PETER ZODAC

January-February
1951

RAMBLINGS OF A ROCKHOUND

By R. F. HENLEY
4075 19th Street, San Francisco 14, California

I have not written up my doings since last April and have done so much prowling around that I am away behind. Much of it has been repeat visits and four of my favorite hunting grounds are, like the quarries at Franklin, New Jersey, just as interesting every time. On May 21st East Bay Mineral Society conducted its monthly field trip to Patterson, Calif., to search for selenite crystals and petrified wood So far as I was concerned the results were nil. Crystals scarce and not good quality and through lack of guidance I did not reach the wood area. But as an outing and a meeting of old and new friends it was a success. I think that is the best part of any field trip.

Manhattan Mine and Horse Canyon

On June 8th Clarence Crane and I took another "yaunt in the yeep" to the well known Manhattan Mercury Mine in Napa County, Calif., and found a vein of splendid fluorescent banded onyx, which pleased us so well that we made another trip several days later. The first field trip I ever made was to this mine. This onyx is beautiful under a long wave lamp. I have long used a six watt lamp but lately procured a 100 watt lamp and it brings out the beautiful colors several times stronger. I have my fluorescent minerals in a closet with the long wave stones at one end and the short wave at the other. June 13th I started for the big California Federation convention at Trona, going by way of Salinas to pick up my friend W. O. Eddy ("Big Eddy") of the Monterey Bay Mineral Society. We stopped enroute to spend a day at Horse Canyon, California's most noted collecting spot which has produced some of the finest plume agates I have ever seen. It appears on the maps as Cache Creek but all rockhounds know Horse Canyon and few would recognize the name of Cache Creek. Geologists and paleontologists here found fossils of the eohippus (three toed horse) and their name sticks. We were not overly successful but did get some fair specimens. It is like digging potatoes. You use a pick and shovel and work over the ground to bedrock which is from 12 to 18 inches down, pick out the small stones, dip them in water, keeping the good and discarding the bad.

Trona Convention

The town of Trona with a population of several thousand is owned entirely by the American Potash and Chemical Company, but there are a number of outlying villages. In Trona there is, I believe, a "guest house" but no hotel. The convention was held at the recreation area five miles north of Trona with a large tent like a circus tent for exhibitors, and the dealers parking their cars in the open and spreading their wares on tables. The attendance was placed at about 1000 with under cover housing in Trona for about 150 including me and the rest camping under the trees if they came early and the late comers spreading out in the desert. The A. P. & C. Company brought in a truck load each of kernite (borax) crystals from Boron, drill cores from the wells from which the brine containing the chemicals is pumped, and another of what looked like coarse sand and gravel but which contained plenty of hanksite crystals. These were dumped on a big concrete slab and the rockhounds were soon busy scratching like a flock of chickens in the garden. I secured enough kernite and hanksite to supply a number

of friends and put a few in my own cabinet. There is no sizeable town within 100 miles of Trona and it was therefore unique as a convention which is usually held in some large city. Next year it will be held in Oakland. San Diego made a strong bid for the 1951 convention and had half a dozen speakers, each primed with a well prepared arguement. Then Mr. Orland J. Bell, arose to put in a bid for Oakland. He brought no supporters but made such a fine showing of what the accommodations were and of the financial and moral support we would receive that Oakland won easily. I managed to get on the floor and put in a few impromptu remarks for Oakland and also express the hope that San Diego might get the convention in 1952 when there will be some other attractions to draw visitors.

Mirabel Mine
Travertine Quarry near Fairfield

July 14th I received a telephone call and the party at the other end of the wire introduced himself as Mr. Sherman L. Clark of Lancaster, Massachusetts, and a member of R. & M. A. He had brought with him a copy of R & M from 1948 with my address. He called in the evening and I passed out a fair supply of specimens with which he seemed well pleased. The following Friday he called again bringing with him Dr. G. Eric Jones of Oshawa, Ontario, Canada, and at 6:15 P. M. we started for the Mirabel Mercury mine 90 miles to the north, arriving after 9:00 P. M. where we prowled the dumps until after midnight loading his car down with all he could carry of that fine fluorescent dolomite which is so beautiful under the long wave lamp and then returned me to my home at 2:30 A. M. The "evening" was quite a success. So the following Friday, these two gentlemen with their wives and their friends, Mr. Schneider and his two sons of Bakersfield, came again and we went to the travertine quarry near Fairfield in Solano County, Calif., and again we were well rewarded with some large blocks of solid semi-translucent travertine which will make beautiful book-ends. I use it also to make ashtrays, and when I present them to friends, each treasures it so highly he is afraid to put ashes in it. I won't tell how many pounds of stone Mr. Clark shipped home.

Wonderstone Locality in Nevada

Early in August I went over to Fallon, Nevada, and called on my friends, Mr. and Mrs. Henry Ringstrom. They took me to a wonderstone claim which has been staked out by the local mineral society so that all rockhounds may have a place to go for it. Too much of the favorite hunting ground has been staked out by private parties. I secured some wonderstone of a pattern that was new to me. It is mostly in small blocks from two to four inches square with no indication of what is inside but on sawing, it discloses concentric rings in almost every block. Their daughter, Nancy, recently went to another promising location and says that for 50 cents apiece she will show her parents where it is! At last accounts they had not yet reached an agreement. I think that eventually they will settle on her own terms.

Williams Creek Jadeite Occurrence

September 15th I went for a three day trip to Covelo, Mendocino County, Calif., where on nearby Williams Creek there is a new find of jadeite and under the guidance of Mr. Charles Stockton who owns the motel and is also a rockhound we secured a fair supply, some of which came from Mr. Stockton's back yard. This was the goal of the East Bay Mineral Society's monthly trip and I found visitors from various other societies some of whom I knew. I had for my companion my friend, Louis A. Baer ("Crab Louis"), who always insists upon preceding me. He says it is alright to proceed with a baer ahead but to reverse the situation, Oh, No! We did our prospecting Saturday forenoon and then saw a big thunder-cloud forming and hurried back to camp. We had not much more than returned when the storm broke with the heaviest rain in 48 years. Every room in the new motel leaked and the rain blew in under the doors and flooded the concrete floors. However, Mr. Stockton got busy with a mop and kept us comfortable. When it

began dripping on my cot Louie started to "rib" me until it began to drip heavily on *his* bed and the tables were turned. He had just one little dry strip on which to pass the night. We left Sunday forenoon and later learned that they had another storm that afternoon.

Jade on Eel River

Announcement has just been made of a new find of dark green nephrite jade and light mottled green and gray jadeite on North fork of the Eel River. I hope I can go there some day. The California Division of Mines is preparing a complete report on jade in California.

Field Trip in Nevada

And now I have made the acquaintance of another victim of rock fever, Mr. J. E. (Jack) Musser, who saw my name in a mineral magazine, so he came and punched my door-bell. So on September 27th Jack and I and Crab Louie were off again to the Manhattan mine. Jack has the muscle and I have the "know where." He is now buying equipment and will soon have a fine lapidary shop.

October 3rd I started to join the field trip to Hoover Dam which was sponsored by Clark County Gem Collectors of Las Vegas, Nevada, and to which 40 societies were invited to participate. I went by way of Salinas to pick up my friend "Big Eddy." We stopped at Yermo, Calif., where there are half a dozen rock shops, all well stocked, and did some trading. Prices were reasonable. Arriving at the Dam we camped at the public grounds by Lake Mead and met some of our friends including, the Ringstroms of Fallon, Nevada, Lelande Quick of the LAPIDARY JOURNAL and the Gordons of Long Beach. The goal was a virgin field east of the Dam on the Arizona side and when the caravan started it was over a mile long. At the turn-out from the highway our hosts checked in 320 cars and 870 people. No lack of parking space on the desert!

It was so well publicised that perhaps we expected too much but I think everyone had some specimens and I saw one especially fine one which had radiating needles like pectolite but was of a dark brown color. The early birds first in the field "collected" two rattlesnakes but in all my ramblings I have never but once came upon a venomous snake and then someone else saw it first. See page 37, R & M, Jan-Feb., 1950. Progress was slow for the last mile or two as it took time for the cars to turn off the highway but on leaving the field they left a few at a time and just melted away in other traffic.

Leaving Lake Mead I went to the Las Vegas Wash where I picked up some nice blocks of green jasper for cabochons but most of the caravan went either to

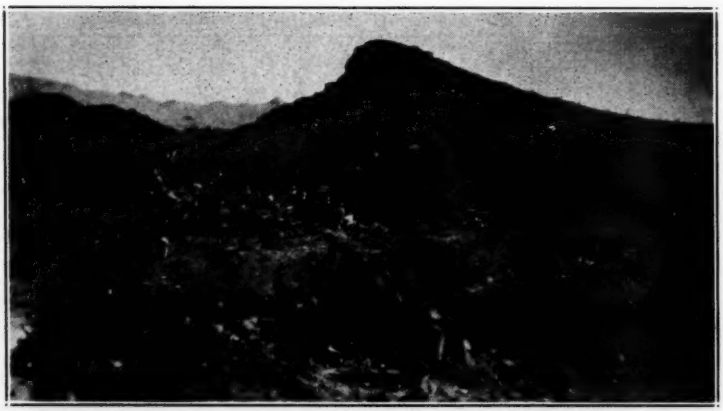
Collecting jadeite at Williams Creek near Covelo, Mendocino County, Calif.

the field of the day before or to the Park onyx field near Henderson. I have seen some of it and it is good. We stopped again at Yermo to visit the "Calico Mountains Trading Post" owned by M. M. Cuesta where we did a bit of buying from his stock and camped that night in his back yard. The next day he took us out to a jasper field in the Mojave Desert, Calif., which had not been so thoroughly scoured by the rockhound fraternity and we secured good material. We then headed straight for the Pacific Ocean and collected some good jade pebbles from the beach and then home.

More Trips in California

October 20th I made another visit to the Guadalupe Mine in Santa Clara County, Calif., (R & M Sept-Oct., 1948, page 797) this time with Jack Musser. To our surprise we found some fine fluorescent dolomite which at first did not look promising but when we put it under the lamp at home we saw that we have to go there again and that right soon. Jack is so enthusiastic that he kidnaps me at every opportunity and I drop everything and go! Only a heavy rainstorm has enabled me to stay home today to write this article.

On Sunday, October 22nd we were off again for the much visited Mirabel mine, this time, Jack, "Mrs. Jack", Louie and I. Jack knows how to bust those big ones and we had some more surprises, including some spotted fluorescent stuff that has a bluish cast that Jack calls "calico." We made friends with the new owners of this property, Mr. and Mrs. Kelly Day and Mr. and Mrs. Arthur E. Lape. They have built a motel, a cocktail lounge and open air dance floor, and some trout pools and have laid out 65 parcels of from one to three acres which are being offered for summer homesites. Jack took Mr. Lape up to the dumps where he picked up a few random pieces and brought them back and showed them off in a dark closet with our long wave lamp. Mr. Lape was suddenly seized with a violent attack of "rock fever." He exclaimed, "from now on my hobby is rocks." We had to sell him our lamp and replace it on our return. A few days later he called on me in San Francisco to get another lamp. A rockhound from Los Angeles on his way to Seattle stopped off and picked up a big block from the dumps and when he saw it under Mr. Lape's lamp he bought the lamp from Mr. Lape so he could take it along to display his new find. This little lamp is

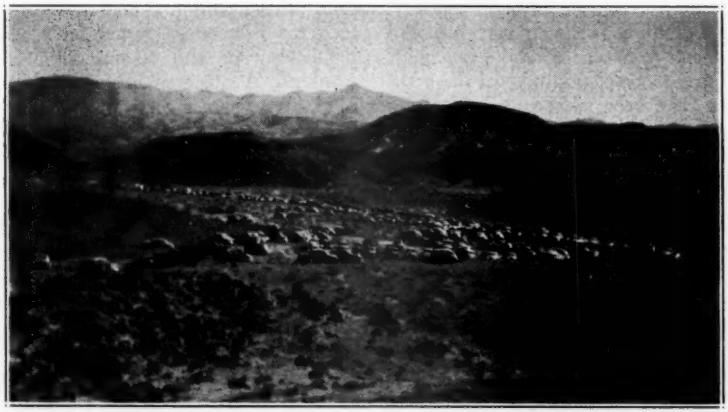


Some of the 870 rockhounds leaving the collecting area (Hoover Dam field trip.) Parking area is over the ridge.

a portable, weighing only eleven pounds with batteries and a fine thing to carry in the field and also the most inexpensive that I know of as it costs me only $35.00 and can be used either on batteries or on house current. But for the house I like my new 100 watt lamp, also very reasonably priced.

Sunday, October 29th, off to the Mirabel again and although there was an intermittent drizzle of rain we defied it and brought back more beautiful fluorescent dolomite. Even Marie "Mrs. Jack" ignored the rain. Jack won't let me sleep or even keep up my homework. I had to beg off so I could finish this article. He calls me up and says "Let's go to such and such a field" and I drop everything and go! Then he takes me to his house, feeds me a big dinner and sometimes puts me to bed. I told him about that new find on Eel River and he says we are going. He says that next summer we are going to Wyoming for jade. Very nice of him to let me know so far in advance what I am to do! I hope Marie goes along. P.S.—This is October 30th. Just as I finished this my morning mail arrived and brought me the Bulletin from East Bay Mineral Society which announce that there will be a field trip to the Guadalupe mine next Sunday, I called up Jack and he said, "We will go down tomorrow and bust up that boulder and after getting ours there will be some nice stuff for the other boys. But just now I am about to start for Minerals Unlimited, Berkeley, to see if my cut-off saw has arrived, and then go to see Bill La Rue in Oakland about building an automatic polishing lap." We're off!

But before signing off here is a double invitation. Visiting rockhounds, come and see my collection and my closet bulging with fluorescent minerals from various localities. My address at head of this article, telephone UNderhill 1-0170. Also Jack (J. E. Musser, 901 Huron Avenue, telephone DElaware 3-4891) invites you to come and see his closet that glistens like a jewel case with minerals from Mirabel and Guadalupe, activated by two 36" long wave tubes and make my closet look sick. Long before this appears in print Jack will have completed his lapidary shop with a full line of the latest modern lapidary units from a 24" saw to a button cutting press.



Parking area (320 cars) Hoover Dam field trip.

THE ROVING ROCKHOUNDS ROVE AGAIN

By FRENCH MORGAN
2601 Brentwood Road, N. E., Washington 18, D. C.

Five round trips by auto across the United States should be enough to satisfy any family, but not the roving Morgans. Which bears out the Biblical statement of the Wise Man that, "The eye is not satisfied with seeing nor the ear filled with hearing." Knowing this to be true, no attempt was made to curb the impulse and we launched out on the sixth trip, leaving Washington, D. C., the morning of June 7th, 1950. An overall picture of a three or four months itinerary was in mind, and numerous individuals along the way had been contacted by letter with reference to a visit with fieldtrips during the summer. With two exceptions noted later, a schedule as to place and time of arrival had not been definitely decided beforehand. We would be guided entirely by inclination—or the pocketbook.

Maps had been sketched and notations made to the effect that geodes would be collected at Greencastle, Ind., and Warsaw, Ill., Lake Superior agate along the Mississippi, carnelian agate out of Colorado Springs and zeolites at North Table Mountain just north of Golden, Colo. That had been the intention, but a delaying mishap at the start did not give time for a stop at the first three localities, and a temperature of 96 degrees in the shade caused us to pass through southern Kansas as rapidly as the car wheels would revolve, not to exceed 65 miles per hour. It was easy to be convinced that the good carnelian had been picked up heretofore, and one glance at the forbidding slopes up North Table Mountain persuaded us that the zeolites at Goose Creek, Va., were just as good, although smaller, and —well, after reaching home we would collect at Goose Creek without the loss of so much sweat. After a yearning backward glance or so to see Golden disappear to the south, Longmont loomed up in the north to point the way to Rocky Mountain National Park by way of Estes Park village.

Our first unusual experience happened that morning While waiting at Pueblo to have the car serviced, two old maid school teachers drove up and parked, one going into the station. Noticing the car bore a Washington state tag, I accosted the lady in the car and asked from what part of the state they came. When she said Seattle, I told her we would be there later in the season. I then began to tell of the wonderful fields of berries and vegetables in the Puyallup-Orting valley we had seen on a former trip. At that point the second lady returned, and hearing me brag in such a manner, simply blew up without asking what it was all about. Her companion shushed her up in a hurry by telling her it was Washington I was talking about. That mollified her and from then on she was able to top me.

A tent and camping equipment that had not seen service in three years was taken along. This was familiar territory so we decided here was the place to put the equipment to use by repairing to the Bear Lake campground. There was considerable snow around the lake, and a light frost the two nights we remained in the Park.

Two students from the University of Illinois, on a hiking trip in the mountains, were camped on one side of us, and when ranged around the evening camp fire it did not take much urging to get a discussion started on economy, psychology or the waning intellect of mankind. A blistered heel looked like it might terminate their vacation activities until Mrs. Dr. Morgan came to the young man's rescue with lotion, Epsom salts poultice and bandage, with the result that when we departed two days later they were starting out on a two days climb of Longs Peak, the highest point in the Park.

Dr. Morgan also came to the assistance of the lady camped on the other side of us. The dentist at Estes Park could not give her an appointment for several days and told her to keep the cavity filled with paraffin. Not having the paraffin, she called on us for help. We had no paraffin but did have wax candles. The tooth was

filled with shavings from the candle with results as good, apparently, as if paraffin had been used, for the tooth had not ached when we departed westward on the morning of June 15.

We were in no hurry, but drove on over Fall River and Berthoud Passes without stopping, other than a breathing spell at scenic points, since we had been this way several times heretofore. At a drive-out place well up Trail Ridge Road, where the view was exceptionally grand, we had a second experience. A car from Kansas came to a stop beside us and the men folks piled out and started for the rim wall. They called to the woman in the car to get out and come on, but she did not budge. When they called a second time she said she did not like it, and they could not get back to Kansas too soon to suit here. When other tourists laughed I remarked that I would not trade the view before us for the whole state of Kansas. That seemed to upset her very much and she was still muttering (seated in the car) when we drove away.

More snow than usual, for the time of year, was in evidence, a condition that prevailed all through the west, spring being later than usual. Road conditions down Berthoud Pass and up Loveland Pass on U. S. Highway No. 6, were not bad but delayed us somewhat and resulted in a carwash job that evening to free new paint from splatter from a sprinkled roadbed.

Highway No. 6 was being followed from Wheeler, Colo., to Salt Lake City, due to the fact it was new territory to us. A trip that way had been planned for 1915, and the Blue Book of that date thus described the drive into Glenwood Springs:

". . . 25 miles of rather rough dirt and stone road, balance (40 miles) graded dirt with 20 miles of gravel highway approaching Glenwood Springs. For 15 miles approaching Glenwood Springs the highway passes through the canyon of the Colorado, which for rugged beauty and marvelous coloring has no equal. The wonderful Hanging lake and spouting rock in Glenwood Canyon are unrivaled for beauty."

We had a cabin in Glenwood Canyon the night of June 16th, 35 years after we had planned it. Delayed anticipation augmented realization, but not to the extent of saying that Glenwood Canyon is unrivalled for beauty, for we are roving rockhounds, as the title states, and have seen many other canyons.

A forest fire on top of a large mesa to the east could be seen while taking movie shots of colorful erosion formations in the Colorado National Monument out of Grand Junction and Fruita. The map shows not much of anything between Grand Junction and Price, Utah, and that is about the way it appealed to us. My father used to say that all roads look alike on the map. The same may be said of scenery. But it is all interesting and beautiful in its way, and therefore worth seeing.

Greenriver, Utah, was reached June 17th in time to drive out on a dirt road 30 miles to the south on highway 24, to an agate locality described some years ago in the MINERALOGIST MAGAZINE. Agate and dinosaur bone is supposed to be in sight from the highway. After much looking over the sloping hills, and about to give up, the sharp eyes of the wife spotted chips of agate in the roadway as we turned to pavement. After an hour's search in the hot sun sufficient material had been collected to make a few colorful cabs. No bone was found but an exchange with a dealer in Greenriver took care of that. A most beautiful sunset was observed while the deal was on but a swarm of mosquitos came up out of the river and put us to flight before a picture was taken. We believe it is proper to call this section desert. There was one house in the 30 mile stretch, no trees, and the sagebrush will not average over six inches in height, and not thick on the ground, at that.

Sunday is designated as a day of rest, and being somewhat fatigued from the jaunt of the day before, it was accepted at face value and we rested without trying to find a reason for a way out. A young couple from the east occupying a

cabin adjoining ours were almost frantic when a tick could not be persuaded to loosen its grip on the arm of their three-year-old daughter. When they appealed to us for help Dr. Morgan again rose to the occasion, and with a bottle of iodine and my pocket knife, faced the difficult situation. When the operation was successfully concluded it was found that the patient had born up more courageously than the parents.

A two day field trip to the Muldoon country between Craters of the Moon and Sun Valley, Idaho, had been planned with Mr. Charles C. Merrill, of Buhl. We arrived on the appointed hour, and enjoyed very much our stay with these friends made by the swapping route. The trip to Muldoon was not made, however, since relatives from Chicago, on their return from California, pulled in just before our arrival, and not being rockhounds—'nuff said. After a short trip to a Snake River gravel bar where white agate was collected, we drove on with the intention to visit the locality again at some future date.

One of the two definite plans made before starting the trip, as noted in the opening paragraph, was to meet a number of collectors at Payette, Idaho, on June 23rd, and spend the week there on field trips in tow of Mr. Frank S. Zimmerman with members of the Payette Mineral Society. The Muldoon trip having been cancelled, Payette was reached a day early. To our surprise, all members of our party, twelve in number, arrived that same day, all a day early. That is a little difficult to explain, since we were driving from Washington, D. C., Mr. and Mrs. Richard Sylvester of Syracuse, N. Y. were traveling by rail and plane, Mr. Elroy McCaw, and niece Mrs. Barbara Blood, were driving from Bremerton, Washington, Mr. and Mrs. Lawrence Runyan, son and daughter, driving from Tacoma, and lastly, Mr. C. H. Robinson, Sr., and Foster Harlan, from Puyallup, Washington.

Our early arrival upset the apple cart of our hosts who had arranged for high axle cars and trucks to take us to localities where new modern cars have no right to be. Rather than leave us on our own for the 23rd, Mr. Francis Pugh came to our rescue with his bright red pickup truck, and a two day trip was made to a uranium prospect in the wilds somewhere east of the Payette river. This was a rough trip for all of us, especially for the lady who had never slept in a tent.

Following Localities Were Visited:

A—Agate, San Rafael Swell, Utah.
B—Aventurine Quartz, Utah.
C—Agate, Snake River, Buhl, Idaho
D—Agate Nodules, Oregon
E—Agate, Homedale, Idaho
F—Uranium Minerals, Idaho
G—Petrified Wood, Vantage, Wash.
H—Coxcomb Calcite, Metaline Falls
I—Agate Nodules, Red Top Mtn.
J—Agate-Jasper, Silver Lake
K—Silicified Chert, Wasco, Oregon
L—Geodes, Hamilton, Ill.
M—Fossils, Wilmington, Ill.
N—Celestite, Clay Center, Ohio

and some more of us who had never enjoyed the pleasure of a seat on the floor of an open truck at 40 miles an hour over a rock road with a wet, drizzly wind blowing. But Mr. Pugh got us there safely, and got us back, including a load of fluorescent uranium ore. This drive was all through very scenic country with snow in sight to the east.

At eight o'clock the next morning, Sunday, with sore joints, aching backs and cold winds forgotten, the whole crew were waiting in readiness when local club members came by and picked us up for a trip to a newly discovered thunder egg locality in eastern Oregon. The nine car caravan was led by Mr. and Mrs. Leslie L. Perrigo. Our party was sworn to secrecy, but it made no difference, for after 50 or 60 miles of pavement and 30 miles of dirt and mud, us tenderfoot easterners could not find the place again on a bet. Rain the day before had softened the gumbo and when about half way out on the dirt road, we bogged down. In an hours time six cars had been fitted with chains. The trip was continued in these cars, the other three being left parked by the roadside. Dust was flying when they were picked up on the return trip. This is a wonderful agate field. Nodules up to a foot or more in diameter are plentiful with indications that digging will be good when the surface material is depleted.

Early the next morning, June 26th, a caravan of six cars headed by Mr. Zimmerman and Mr. Pugh, drove to a new location on Hog Creek, northwest of Weiser. Nodules and vein agate of a different type from that found in Oregon was collected here. The ground is covered with large chunks of white agate, some of it being white plume. We hurried back to Payette to get ready for a meeting of the Payette Mineral Society on the lawn of Mr. Zimmerman's that evening. We became acquainted with a number of the 65 present at the meeting, and only hope we will be privileged to meet them again some day. Mr. Zimmerman had just completed a basement room with glass cases on all sides, which housed his wonderful collection of polished specimens, the most of which fluoresce under the black bulb.

Fatigue was beginning to tell on us folks from the east, and it was not until 8:30 the next morning that our four cars, in company with Mr. and Mrs. Zimmerman, left for the Homedale locality. My wife and I had been here with the Zimmermans in 1947, and regardless of all the collecting that has been done in the meantime, there appeared to be as much good material on the surface as on the first visit.

Being near the ghost town of Silver City, I suggested that we go there. All were willing, so we headed south while the Zimmermans returned to Payette and home. The drive to Silver City was hair-raising at times, being through mountain country, and the overnight stay in the town was very interesting. This is a spot that can be recommended to the tourist, rockminded or not.

Evening of June 28th found us all back in Payette. Early the next morning our party left for Vantage on the Columbia River, in Washington, where the second annual Pow-Wow of Rockhounds was to be held July 1-4. By invitation we stopped at a precious opal prospect south of Baker. The digging was so exciting that it was after three o'clock before we could pull ourelves away. Lunch was eaten at Baker at 4:30, and Mr. Robinson was so dehydrated that it took six tumblers of ice water and two large milkshakes to fill him to satisfaction. And the rest of us were not far behind. The sight of snow capped mountains on both sides of the city had the effect of cooling us somewhat, but the delay cut in on time until a point 30 miles beyond Pendelton on Highway No. 30 was as far as we drove that day. But it did not matter, for some of the party actually found fire opal.

Ferry across the Columbia at Patterson, the drive through Horse Heaven Hills, Yakima, Ellensburg, and to Vantage, were without incident, other than it was all new terrain to us. We had read much about Ginkgo Park and its wood and it was now very gratifying to us to be there in actuality. Vantage, Tom Stock-

dale, Adam East—were names that had intrigued us for a long time.

The Pow-Wow at Vantage was the second objective to be reached on a given date after leaving our home in D. C. Since Mr. C. H. Robinson, Sr., may be called the father of this movement, and his son C H. .Jr., was Pow-Wow chief, a short account of the meet is in order since it is to be an annual event at that locality, and open to all rockhounds. In fact, visiting rockhounds from other states are invited to be present at the next meeting to be held July 4-8, 1951.

Eighteen mineral societies of Washington had a hand in the arrangements and next year more will be asked to join. Tom Stockdale of Vantage gave free use of his camp ground and apricot orchard, and most of the 404 who registered occupied tents or trailers for the four day affair, July 1-4. Several field trips were held each morning to agatized wood localities or to hunt Indian artifacts along the river. The afternoon and evenings were devoted to speaking and addresses by such authorities as Prof. George Beck of Ellensburg College, Dr. Sheldon L. Glover, State Geologist, Adam East, collector of Indian artifacts, Dr. Erna Gunther, Mrs. Ruth E. Peeler, a member of the Board of Washington State Parks, faculty members of the University of Washington, and many others. Moving pictures closed the day's activities, and believe me, folks, we were always ready for bed and a good night's sleep. Hiking and boat trips on the river were available for those who did not care to go on rockhunting trips. It was an informal gathering with plenty of time to visit and swap rocks.

Much agatized and opalized wood from surrounding localities was added to our loot while at Vantage, but Mrs. Morgan had a system all her own. While I climbed Saddle Mountain and toiled and perspired all morning with average results, she would stay in the shade at the campground and visit. When I returned in the evening, worn to a frazzle, she would have as much material as I had collected—and half of it ready slabbed.

Mr. Robinson was to be in charge of our party after leaving Vantage, and had planned field trips and outings for the Sylvesters and ourselves, who were to be his guests while in the State of Washington. After Vantage came Grand Coulee Dam and a night at Chelan on the lake with the same name. Mr. Robinson had written of Red Top Mountain (see Nov.-Dec., 1949, Rocks and Minerals) and there was the scene of the first field trip on July 6th. The trip up this mountain has been described so fully that sufficient to say here is that we made an average haul—after which Mr. Robinson walked the five miles down in addition to the two and one-half climb to the agate beds.

Mr. Robinson had talked all spring about making the trip to the large lead and zinc mine at Metaline Falls, in Pend Oreille Co., Washington, telling about the wonderful vug lined completely with coxcomb calcite crystals, the sight of a lifetime. Details for the trip had been worked out and agreed on by all concerned while at Vantage. From June 23rd up until this time the pace had been rapid with no letup in strenuous exercise, as may be gathered from the above, and the effect was beginning to show on all of us. The Sylvesters were on their maiden trip through the wild and wooly, and being what our western brethren love to call us, tenderfeet from the effete east, and not inured to back to nature facilities of the rough and rugged, suddenly decided they had absorbed the strenuous life to the saturation point, and could hold no more. Desire to go places, see things, and to collect rocks, waned as rock appeal lost its glamor, and the desire to rest waxed. Wax had it, and they rested. That kept Mr. Robinson at home, and later, when my wife and I, with Mr. Foster Harlan as passenger, arrived at Spokane, it was found that Mrs. Blood was prevented from coming because of a lame back resulting from a mishap at Vantage.

Mr. McCaw of Bremerton, met the three of us at Spokane and we made the attack on the mine from that point. Since an account of this trip will be reported at

another time, sufficient is to say that many fine specimens were obtained by the three men who went down into the mine. When we returned to the cottage at midnight it was found that Mrs. Morgan had two fine specimens given her by the landlady.

After the five day trip to Metaline Falls, we rested a day, then on July 14th drove to Paradise Valley, Mount Rainier National Park, taking the Robinsons and Sylvesters. We had been there several times but had never seen it look as it did on this trip. At that late date the snow drifts still covered the side and part of the roof of a lodge building, a tunnel through the snow leading to the dining room. Tourist cabins were entirely covered. On the way up the river to Nisqually Glacier Mr. Sylvester found two or three small agates in the gravel, showing gemstones may be found in the park. That evening we attended the meeting of the Puyallup Mineral Society, met many of the folks present at Vantage, and helped make the evening a success by appearing on the program—without advance notice.

Mr. Harlan took Robinson and the Sylvesters for a two day drive around the Olympic Peninsula while Mrs. Morgan and myself went to Bremerton to visit McCaw and Mrs. Blood. A number of collectors in the area were visited and our collection grew as theirs diminished. While Mrs. Blood dabbles with micro mounts, Mr. McCaw specializes in fluoresence, having all the lights. His collection is something to behold. The Olympic Peninsula group arrived the evening of July 18th, and we all attended the meeting of the Kitsap Gem and Mineral Club, McCaw President.

That section of the U. S. has wonderful recuperative qualities for easterners, as noted when Mrs. Morgan, under the delusion that dental attention was needed, visited a dental office in Tacoma only to be told that all was well and to get a checkup upon reaching home, if not satisfied. With nothing to do, a field trip to Silver Lake, 105 miles to the south, was cooked up.

Three cars carried the party for this two day trip, which was a strenuous one. For nothing was to be found without digging pits three or four feet deep in the hard clay, which must be refilled when the days activities were concluded. On the way home a stop was made at Salmon Creek for a supply of those peculiar looking pseudo coprolites, said to be composed of siderite, and at Adna where carnelian agates were collected in a wheat field on the side of a mountain.

Although a car load of material had been collected on this trip, some one was dissatisfied, and after a couple of days to pack the loot and think it over, a second trip was made to the above locality, the Runyons of Tacoma, being members of the party. Luck was with us again, and more fine specimens were collected, as usual, by the other person. A drizzly rain began to fall the second day, as work to fill the holes was started, and before long all were soaked to the hide. To make matters worse, sufficient extra clothing was not at hand to make a complete change, and the 105 mile drive in a downpour, and after dark, was made in a more or less bedrabbled state.

July 27th had now arrived and the stay in Washington was much, much longer than contemplated. A dinner engagement in Tacoma on the 28th would be kept, then we would head for Oregon and the South. At this point Mama Nature stepped in and took a hand. As the wife was going next door to make a phone call about the dinner, a slip on a wet board landed her on the walk and when her hand landed on a hunk of petrified wood bordering a flower bed, the right forearm was fractured.

After resting for a week we departed for home on August 8th, going by Antelope, Oregon, for a short visit with the Silvertooth family. Near Wasco a stop was made to collect beautiful silicified material in a road cut. While there Dr. A. C. Mitchell and wife of Pacific Grove, Calif., drove up and took over after a pleasant visit. The next day the Silvertooth's took us for a day's drive through the Hay Creek area, landing up at the Peterson Rockgarden, something to be-

hold.

A vacation trip is pretty well ended when a start for home is made, but we did not hurry. The drive up John Day river was scenic. No collecting was done except for wood out of Prairie City where a chance acquaintance guided us.

A side trip was made to Saratoga, Wyoming, to see Mr. R. I. Martin, a rockhound of long standing, but he was in the jade locality on a four day trip. How these Rockhounds get around! Medecine Bow Mountain was crossed on the way to Laramie and a snow squall encountered at the 10,600 foot pass—on the 14th day of August. Mountain tops were covered with quartzite boulders to look for all the world like snow.

Two miles above Hamilton, Ill., on the Mississippi River, as many geodes as could be carried were collected in a couple of hours, and at Naperville a mail carrier loaded us with fossils from the coal areas we had read so much about in the MINERALOGIST and ROCKS AND MINERALS. One more stop was made, at Clay Center, Ohio, for celestite crystals. A good sized vug was located in an hour or so from which about fifty pounds of material was collected, a few crystals being four inches long. These were carried in the trunk of the car to avoid breakage, as had happened on a former trip when specimens were shipped.

Home was reached August 31st, after an absence of more than twelve weeks. Scales indicated the weight of the specimens in the car to be 275 pounds, and modesty prevents revealing the weight of those shipped—and we had intended to high grade. Home being reached ahead of schedule gave time for meditation, with the result that the trip will be completed next year, the start being around May 1st, before Arizona and California turn on the heat.

Be on the lookout for us with a prayer that petrified wood does not strike twice in the same place when,

The roving Rockhound, westward bound,
Again meets kindred kind,
To search the ground where may be found
The gems he had in mind.

REV. ROBERT BRUCE OWENS

GEM COLLECTOR AND LAPIDARY

Rev. Robert Bruce Owens, 78, of 1508 S. Boulevard, Charlotte, N. C., has been, in his own words, "a rockhound for about 35 years" and has "raked North Carolina from end to end in search for crystals and gems."

Rev. Owens' collection consists of some 5,000 pieces, representing more than 80 different kinds. It represents every type of gem material found in North Carolina except diamond. He has done his own cutting. If Rev. Owens' collection is not the largest and most varied collection of North Carolina cut gems in existence, then it certainly is a leading contender.

Rockhoundishly generous, Rev. Owens has made study specimens available to schools: The State Teachers College at Boone, N. C., has a mineral collection of nearly 200 specimens which were donated by the Reverend. He also has given a similar collection to Queens College in Charlotte, another to the Children's Museum of Charlotte (including a fluorescent exhibit) and is now preparing another such collection for Charlotte College.

Rev. Owens says: "On account of my physical condition my rock hunting days are over, but I still like to talk rocks—especially gems."

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(Editor's Note: When the Editor of R & M visited Rev. Owens back in 1938, he was astounded at the number and size and quality of the cabochons seen. We, who are accustomed to see cabochons in ¼ or ½ inch size, would be truly amazed to see them in 3 or 4 inch diameter sizes and by the thousands! And all beautifully polished by Rev. Owens! They were truly magnificent gems! We were always planning to go back to see them again and take notes for an article but the opportunity never presented itself.
Rev. Owens is a member of the Rocks and Minerals Association and has been since June 22, 1931).

SPANISH GOLD MINE OF TURKEY-TOE RIDGE

Will gold mining start again in North Carolina? Yes, according to Rockhound George Bowman, of Newland, North Carolina, old prospector, miner, mineralogist, County Superintendent of Schools of Avery County, and what not?

"Let it all be true or not," said Bowman, but he gave me one of most get-hold-of and hold-onto-you stories of gold mining that ever played across the broad imagination of a gold seeker since the days of the Golden Fleece, equal to, if not surpassing—leave it to the westerner —the story of the Lost Dutchman's Mine, the placer of John Anderson and Swift Water Bill, or any other gold find or fable far and wide.

"I would not repeat a word of it," said Bowman, who is right much set on accurate information or authoritative data, "unless there were certain historical records actually dove-tailing into this most enthralling story."

"A one-man effort story," Bowman sort of broke away, "and one that heads the man who built his own railroad. And it has happened recently in that old state of the twenty eight and seventeen pound gold nuggets, which back in Civil War days had its slaves in posses of fours each day filling quart fruit jars full of the shining metal."

But back to the historical data, "For instance," said Bowman, "in a letter of April 12th, 1947, from Dr. Jasper L. Stuckey, State Geologist of North Carolina, to a certain minister, Spaugh, Dr. Stuckey writes:

" "Fletcher Melvin Green in his GOLD MINING; A FORGOTTEN INDUSTRY OF ANTE-BELLUM, NORTH CAROLINA, as published in THE NORTH CAROLINA HISTORICAL REVIEW, VOLUME XIV No. 1, 1937, makes some interesting statements, some of which are as follows: . . . De Soto in 1540 and Laudonniere in 1564 all heard reports of gold in the Southern Appalachian Regions. This evidence led James Mooney to conclude that long before the end of the sixteenth century . . . the existence of mines of gold and other metals in the Cherokee County was a matter of common knowledge among the Spaniards at St. Augustine and Santa Elena, and more than one expedition had been fitted out to explore the interior. Numerous traces of Ancient Mining operations with remains of old shafts and fortifications, evidently of European origin, show that these discoveries were followed up, although the policy of Spain concealed the fact from the outside world.' If the Spaniards attempted to conceal the fact, mining operations in the 1830's disclosed their efforts. An English Diplomatic agent wrote of North Carolina mines that there was "indubitable evidence" that these mines were known and worked by the aboriginal inhabitants, or some other people, at a remote period. Many pieces of machinery which were used for this purpose have been found. Among them are several crucibles of earthenware, and far better than these now in use.'

"Sir Francis Drake captured two Spaniards, Nicholas Burgognon and Pedro Morales, who reported that they had seen quantities of gold in the mountains of North Carolina. And the Indians related to the English settlers in North Carolina that a company of Spaniards from Florida had mined gold very successfully in that region for two or three summers. The Indians fearing that the whites would drive them from their lands if this became generally known, put the entire party of Spanish miners to death. Senator Thomas L. Clingman did not believe this tradition entitled to credit, but it does accord with Indian practices.

"The early English settlers made many efforts to locate the mines which the Spaniards and Indians were thought to have operated, but all failed until the beginning of the nineteenth century. Sir William Berkeley, Governor of Virginia, sent out an expedition in 1669 expecting to find silver mines in North Carolina, 'for certain it is that the Spaniards in the same degree of latitude have found many.' James Moore, Secretary of the Colony of South Carolina, made an ex-

pedition from Charleston in 1690 and, led by Indian guides, reached the mountains where he found evidence of Spanish Mines, but failed to discover gold."

"And in this same letter of April 12, 1947," Bowman says, Dr. Jasper L. Stuckey, State Geologist of North Carolina, further writes this same minister: 'As I told you in your visit to Raleigh the other day, I have heard many statements about Spanish gold mining in Cherokee County but have never had an opportunity to examine any of the old prospects.' "

"And now for the story," says Bowman.

"In 1941, T. W. Spaugh, a minister, living in a rural section in North Carolina, visited a family by the name of Wiggins, near Marble, North Carolina, in Cherokee County. While there he heard a strange story of Spaniards mining gold on Turkey-Toe Ridge and that enough gold had been hidden in a certain shaft in these old mines, by such Spaniards, to make ten men rich as Croesus.

"In conversation with a certain Colonel William H. Blair, of one of the largest cities of North Carolina, Spaugh was told again that an English Expedition Force had gone to Marble, North Carolina, near to Turkey-Toe Ridge before the Indians were driven away and tried to get them to tell where Turkey-Toe Ridge was with the old Spanish workings, but the Indians remained "mum." 'The English,' Colonel Blair said, 'were looking for five tons of silver bullion and a rich mine.

"In February, 1946, Reverend Spaugh went again to Marble and talked to eighty year-old John Palmer. Palmer claimed he knew where the old Spanish works were. He led Spaugh to a place on Turkey-Toe Ridge, three miles from Marble, and pointed out four old shafts and an open cut. One of the shafts, Palmer claimed was a certain shaft that Palmer's father had seen a way-bill, or map, for, which map had been bought from the Indians in Oklahoma. There was originally at the shaft, according to Palmer, a forked chestnut tree in which the wind'ass worked. Palmer's father had seen the forked tree. And within this certain shaft, the way-bill or map had said was ore like unto a cow's hoof. Palmer further stated that he and his brother, 'Bail Palmer,' had opened this certain shaft to a depth of 67 feet, that they, at that depth, had found the timbers morticed and pinned at the corners and eight feet long, but had been chopped in with a dull axe.

"Like many a gold-seeker would have done now, the Reverend Spaugh got a lease on this property and began the opening of this same certain shaft. But at a depth of twenty four feet, he for some reason or other, decided to dig a new shaft some eighteen feet away. At the depth of 73 feet in this new shaft, Spaugh went through a vein of hematite iron ore and ran onto 400 gallons of water per hour.

"After this Spaugh was told by Edmond Welch, of near Marble, North Carolina, that Welch and his grandfather, before the Indians were driven away from Turkey-Toe Ridge, had opened shaft No. 8 of the map, and found the timber in place; that they had been quartered and put in by good workmen, this shaft No. 8, being about 500 feet northeast of Shaft No. 7. He and his grandfather, Welch said, had reached a depth in this shaft of 90 feet, and that they, back then, had found picks, buckets, shovels, and pieces of silver ore. Welch claimed further that they had pulled a twelve foot timber out of the bottom, which according to Spaugh, would have assured the shaft's being 102 feet deep. But certain reasons prevented the Welches from completing the explorations of the No. 8 shaft.

"Spaugh now encountered the Reverend Sebald Smith, an Indian Preacher of Whittier, North Carolina, and here is Smith's story to Spaugh:

" 'There were over two hundred Spaniards worked at Turkey-Toe Ridge for eight years. They had a treaty with the Indians to furnish the Indians with guns to hunt game with to feed the Spaniards. At the end of eight years the Spaniards wanted to renew the treaty but the Indians would not do it. A fight ensued and the Indians drove the Spaniards away

beyond Robinsonville and there surrounded them and starved them to death. The branch where this happened is called HUNGRY BRANCH to this day. While running the mines the Spaniards piped air down into the deep works with bellows and reeds. They went to Tennessee and got coal to smelt their ores with, on mules. The Spaniards had stored their bullion in a certain shaft as they worked but when the fight had ensued two of the Spaniards had escaped and had rushed back and cut down certain timbers to the shaft, thus covering up the bullion.'

"Reverend Smith further relates that only several years ago he was over at Turkey-Toe Ridge looking over the old workings and found a Spanish pistol in the open cut, No. 3 on the map, and that he, being a poor man had sold the pistol for $25.00.

"With this new information the Reverend Spaugh continued his new shaft, with almost his help alone, to a depth of 123 feet, where he struck rock having the shape of a cow's-hoof, which rock assayed seventy cents per ton in gold and a trace of silver. Hereupon Spaugh put down a shot and sank his shaft on to a depth of 127 feet. Spaugh rested now because of the exhausting work of the seven preceding weeks, but states that the water is no heavier at 127 feet than it was at 65 feet."

According to prospector Bowman the formation of the old works on Turkey-Toe Ridge are in the form of a rectangle, with four old shafts as the corners. One of the old shafts, Spaugh partly opened, but later, for some cause, moved off line, from one corner to the other, for several feet. Hematite iron ore outcrops northeast of one shaft and in line outcrops heavily at another shaft.

Other substantiating evidence as to the authenticity of these old Spanish diggings, Bowman says, is as follows: "Mr. William Dockery, engineer at the quarry at Marble, North Carolina, dug up in these old works in 1913, as Spaugh relates, a furnace at the end of an underground ditch, running about 150 yards, which ditch was covered with large rocks and mortar, evidentally used to carry air by means of the draft to the furnace. John Palmer also claims that his father panned quite a lot of beads of silver from near the furnace, also that when he and his father, in the old days, had opened the old shaft and found shovels, buckets, etc., that they had found an old rope, made of bark, about three feet long. Further Spaugh vouches for the fact that Dr. Jasper Stuckey, State Geologist of North Carolina, states that Jack Dillard, a lawyer of Murphy, North Carolina, sent some tools found at this place to the Smithsonian Institute, in Washington, D. C., to see if they could be identified as Spanish and that the Smithsonian Institute identified them as of European origin of about the 15th or 16th Century but couldn't say as to whether they were or were not of Spanish make."

And here ends the story, Superintendent Bowman says, except that the Reverend Spaugh is continuing his work on his shaft at Turkey-Toe Ridge.

"But what about the gold, Mr. Bowman?"

"Well, now, there you are, Lady,—and men?" Superintendent Bowman said, "it is as I told you, one of the detouringest, bullyiest, most red-blooded, actually-happening one-man gold-mining stories that I have ever heard of in all my mining and prospecting days, and days of swapping gold-mining yarns, but there,—well—there moit be—dead Spaniards, and gold down thar!"

Hattie Hughes

(This story is absolutely authentic, or was a month or so ago, when the Reverend Spaugh was continuing his shaft. H. H.)

Editor's Note: The above story was sent in by Mr. Bowman, one of our subscribers. Part of the letter sent in with the story reads: "I am enclosing an article that I dug up a year or so ago for Mrs. Hattie Hughes, a correspondent for one or two of our local newspapers. I do not know if this article will smack of your atmosphere or not. All I can say is that the story is unusual. The Reverend T. W. Spaugh, Rt. 2, Winston-Salem, N. C., came to me with his samples and an appeal to help him get his diggings furthered in the way of finance. I was greatly

(*Continued on Page 76*)

QUARTZ

By EDWIN S. ROTH
1554 Hill Drive, Eagle Rock 41, Calif.

(An address delivered before the Los Angeles Mineral Society, September 21, 1950.)

Mr. President, members of the Los Angeles Mineral Society, and Guests.

Speaking about minerals is quite different from speaking about romance or historical events. While there is not very much one can say about gold or borax as minerals there is much to be said about their romance and history such as the discovery of gold, the various gold rushes and an untold number of stories on borax from Death Valley days.

The mineral I am going to speak about tonight has not much romance or many historical events as a background but nevertheless is a very interesting one, namely, Quartz.

Quartz belongs to the pyramidal class of the rhombohedral division of the hexagonal system. The hardness is 7. Specific gravity 2.653 to 2.660. It has no cleavage, and has a conchoidal to sub-conchoidal fracture in crystal form and an uneven splintery fracture in massive forms. The luster is vitreous, greasy to dull. The streak is white when pure and it is transparent, translucent to opaque. Quartz occurs in crystals and massive forms, mamalaria, stalactitic, concretionary, and sand.

Quartz makes up about 75% of the surface material of the earth, while free quartz composes approximately 12% of the earth's outer shell.

Quartz belongs to one of the largest families of the mineral kingdom. In order to have a better understanding of quartz I will go back a few years, approximately three billion years, and investigate the quartz family tree.

At the very beginning of the creation of the earth was a complex fluid mass of molten material known as magma. In this complex solution the various elements were free to circulate and unite with one another forming mineral molecules.

There were three different magmas. The basic magma containing no silicon. The intermediate with little silicon and the acidic containing a large amount of silicon. Consequently the basic magma contained no quartz, the intermediate very little and the acidic an abundance of quartz.

We can safely state that the present pattern of the elements has probably endured since the beginning of time. They are the results of mathematical laws, and fundamental mathematical concepts do not change.

The elements may be divided electrochemically into two groups, those which are electropositive or those which are electronegative. When forming chemical unions an electropositive element must combine with one which is electronegative. Elements also possess different valences, which implies that they have different combining strengths. Thus a single atom of any quadrivulent element such as silicon, being electropositive may react with and hold in chemical combination two atoms of any electronegative bivalent element such as oxygen.

An atom of any element in order to be perfectly balanced must possess eight electrons in its outermost shell. Oxygen has only six and is lacking two, to be perfectly balanced. Silicon has only four and is lacking four to be perfectly balanced. In as much as silicon has four to lose and oxygen only requires two, each silicon atom can accommodate two oxygen atoms in chemical combination. This combination when the two elements unite forms a new compound, silicon dioxide, with the formula SiO_2, which is well known to all of you as the mineral quartz. You have now heard the Genesis of quartz and how from the beginning of time quartz has been formed.

The study of quartz has shown that it exists in two modifications known as the A or Alpha quartz and the B or beta quartz. The Alpha quartz has been formed at a temperature below 573° Centigrade and belongs to the hexagonal, trapezohedral, tetartohedral class. The beta quartz

has been formed at a temperature above 573°-870° Centigrade and belongs to the hexagonal, trapezohedral, hemihedral class. The alpha quartz is termed the low temperature quartz, the beta quartz the high temperature quartz. When quartz is heated above 870° tridymite is formed. Tridymite when heated to 1470° then turns into Cristobalite which is the highest temperature quartz.

We must recognize the fact that this earth is a gigantic chemical laboratory, working with enormous amounts of material and natural forces. Mother Nature has at her command innumerable chemical reagents in solutions both alkaline and acid and an abundance of ground water. She also employs organic agencies and tremendous natural temperatures and pressures, as well as one of the most important, namely time. Mother Nature does not work by the hour nor does she have to hand out any paychecks. She works when there is enough material and conditions are right. As soon as the inflow ceases, nature stops her work until conditions are suitable to continue her work again. When a quartz crystal was in the making she worked until the material was used up and later on continued where she left off. If by some reason the crystal was damaged she would either repair it or start to build another one over it. In this manner phantom crystals were formed. Each phantom is an individual growth and the period of time between them is not known.

All the varieties of quartz may be divided into two great classes. First the crystalline and second the amorphous, those which possess a definite internal molecular structure and those which do not. Both forms possess certain properties in common. The first and perhaps the most important is their chemical and physical stability. Quartz is practically insoluable in acids, although it may be dissolved readily in certain alkaline solutions. This with the hardness of 7 is sufficient to enable it to withstand most of the ordinary weathering. Owing to the fact that its silicon atom already holds al' of the oxygen it desires, quartz does not readily oxidize when exposed to the weather. It has one of the highest melting points of all common minerals, 1600° which enables it to resist all temperatures existing on the earth's surface. Only the internal heat of intense vulcanism can possibly reduce it to a molten condition.

There are two different groups of quartzes. The phenocrystalline and the cryptocrystalline. To the phenocrystalline belongs all the crystals and quartz vitreous in luster such as clear crystals, amethysts, citrine, smoky, asteriated quartz, rose quartz, and aventurine quartz.

The cryptocrystalline varieties although they do not show any external faces have a definite internal molecular structure and are translucent to opaque. To this group belong the agates, sagenites, jasper, carnelian, prase, chrysoprase, sard, sardonyx, onyx and many more.

Quartz is an essential constituent of granite, porphyry, quartz porphyry rhyolite in the granite group, quartz diorite, quartz diorite porphyry and dacites in the diorite group, in feldspathic igneous rocks as syenite and trachite and in metamorphic rocks in certain varieties of gneiss and quartzite. Quartz associates with many elements and minerals and I am going to mention only a few of them, such as gold, silver, copper, graphite and bismuth from the elements, tourmaline, rutile, calcite, sphalerite, hematite, dolomite, pyrite, chalcopyrite, cuprite, and hundreds of other minerals.

There are many localities from which fine crystals, single and groups have been found. In the U. S. A. from Ellenville, Ulster County, New York, came fine specimens of colorless quartz crystals, also from Hot Springs, Arkansas. The beautiful clear quartz crystals, the so-called "Herkimer Diamonds" come from Herkimer County, New York: good amethyst from Amherst in Virginia; smoky quartz and amethyst from Alexander and Lincoln Counties in North Caroline; good amethyst is also found on the Keweenaw Peninsula, Mich. Fine smoky quartz also comes from the Pikes Peak region in Colorado, Mesa Grande, San Diego County, California, and the surrounding

country of Butte, Montana. Good rose quartz comes from Maine and the Black Hills of North Dakota.

Fine smoky quartz also comes from the famous St. Gotthard region and from Goschner Alpe in Ganton of Uri, both in Switzerland; in Italy from Aosta and from Bourg D'Oisans in France. Fine crystals, both colorless and smoky come from Alston Moor in Cumberland, England, Cairngorm in Scotland and large crystals from Betafu, Madagascar. Gem quality amethyst from the Ural Mountains in Russia, Madagascar, Ceylon, India and Uruguay.

Outstanding crystals, colorless, smoky, citrine and amethyst are found at the famous locality in Minas Geraes, Brazil. rose quartz as well as rutilated and tourmalinated quartz and fine phantom crystals also come from this locality.

Opal belongs also to the quartz family. It is amorphous which means it has no internal molecular structure. It contains 3% to 13% of water and probably like chalcedony and agate was originally a colloidel silica gel. There are many theories concerning the cause of the play of color in the opal, and the most satisfactory explanation is, that the play of color is due to very thin curved plates originally formed in parallel positions, but bent, cracked and broken during the process of solidification. These fractures reflecting the light are responsible for giving the opal its play of color. Opals are usually cut in cabochon form, which will show the colors better and is highly treasured as a gemstone.

The cause of color in quartz, especially of the crystalline varieties, has never been definitely established. It was thought that the color was due to three different causes. First, minute (microscopic) included particles, second, something staining or impregnating the quartz but not a part of it, and third, the natural chemical constituents of the quartz. There are a number of elements to which we can turn which possibly could be the cause of color in quartz.

1. Iron (ferrous) green, (ferric) red, brown to black.

2. Chromium, chromatic green acidic oxide, yellow to red.

3. Manganese, manganous pink, manganic violet and black.

4. Titanium, titanic blue to violet.

5. Copper, cuprous red, cupric blue to green.

6. Cobalt, red.

7. Nickel, green.

8. Carboniferous, organic matter, brown to black.

Of late a new theory came out that the color is an optical phenomenon, related to radium, cosmic and ultraviolet emanation. This theory however has not been definitely accepted nor has it been proven. There are many interesting forms in which quartz manifests itself. First, for instance, distorted crystals which may be the results of some unknown interference during the formation of the crystal. Second, inclusions. We have crystals as well as massive quartz which carry inclusions of various minerals as impurities such as rutile, tourmaline, adularia, stibnite, chlorite, pyrite, scheelite and many other minerals. Often the question comes up how did they get into quartz. As quartz is one of the last minerals to solidify out of rock magma, the included minerals, crystals, or massive must have been formed first and when they united with the silica gel, were carried along and held by it until the process of solidification took place.

Pseudomorphs are another formation where the original material has been replaced by silicon without changing its external form. Good examples are petrified wood, calcite and barite. Geodes are another interesting formation where the quartz either is crystallized in the cavities or is massive in the form of agate, showing very fine patterns. There are so many theories as to how geodes were formed, that it is too great a subject to go further into it at the present time.

The use of quartz is widespread. Clear, flawless quartz termed optical quartz is used in many optical instruments, also is cut into thin oriented plates for the control of radio frequencies. It is used in thousands of industries and the crystal stemware is made from fused clear quartz. The colored varieties which are clear are cut and used for jewelry. The carving of beautiful and ornamental objects of art, some greatly used for religious purposes dates back to the Greeks and Romans. The Aztecs as well as the Chinese have exhibited a marvelous skill of craftsmanship in carving. The Romans carved jugs, cups and vases from clear quartz crystals and two rare and beautiful drinking cups were owned by Nero. One of the finest pieces carved from a single crystal is an urn 9½ inches in diameter and 9 inches high. This beautiful piece is now amongst the French jewels. The Aztecs in Mexico carved a perfect human skull with all its details from one large crystal. This skull was held in great reverence and religious significance. It is now in the museum in London, England.

The crystal spheres are worth mentioning. They also date back to the Greeks and Romans, and at the dawn of history the Hindus used them as reading balls and crystal gazing. The largest sphere in the U. S. A. is 12⅞ inches in diameter and weighs 107 pounds. It is rated at a value of one quarter of a million dollars. It can now be seen in the U. S. National Museum in Washington, D. C. Marie Antoinette, Empress of France, possessed a necklace which was made of the rare and most beautiful pink amethyst and considered priceless. She was a woman extremely superstitious, and whenever she wore it she seemed to get into some trouble or something happened. So one day when she drove across the river Seine, she took it off her neck and tossed it into the river. It has never been recovered and so a priceless, beautiful necklace of amethyst has been lost forever.

Our Thanks To Robert Roots!

Editor R & M:

I got my start as a rock hound from Robert Roots of Denver, Colo., to whom I was directed by the Colorado State Museum. He sure gave me a wonderful start and was the person who told me about R & M which has also been of great help to me.

I have found something which might interest you—a petrified peach with the stone still in it. It was found while excavating for a foundation in Aurora. I will let you know if I find anything else of interest.

Richard Muntjanoff
Aurora, Ill.

October 2, 1950

New Finds In The Canal Zone!

Editor R & M:

Since writing you last, I discovered two other collectors much further along than I was and between us we have found some beautiful specimens of bloodstone, jasper, moss agate, petrified wood, etc and some which we cannot identify. All were obtained from the same fill on the west bank of the canal opposite Balboa in the Canal Zone.

Burton E. Davis
Cristobal, Canal Zone

October 11, 1950

Lapidary Journal Issues Nice Calendar

THE LAPIDARY JOURNAL, America's popular magazine on gem cutting, has issued a most attractive calendar in color for 1951. It is a gem lover's calendar as notes, items or verses about gems and jewelry, appear on every page.

THE LAPIDARY JOURNAL comes out bimonthly and subscription price is $2.00 a year. For further information contact the Editor, Lelande Quick, P. O. Box 1228, Hollywood 28, Calif.

MINERALS UNLIMITED PURCHASES EUROPEAN COLLECTION

Minerals Unlimited, 1724 University Avenue, Berkeley 3, Calif., announces the purchase of one of the finest mineral collections imported from Europe in recent years. The collection numbers more than 4,000 specimens and was in the making from 1850 to 1920. The collection is being packed and will be sent in 4 shipments, the first to reach Berkeley about March 1st, 1951.

Covers Every State!

Editor R & M:

I would like to say this for R & M. I believe it offers to rockhounds and collectors the best information they can get as it covers every state in the Union and tells what minerals in those states are worth while.

P. M. Arnold
Akron, Ohio

November 3, 1950

AEC ANNOUNCES NEW PRODUCTION SITE TO BE LOCATED IN AIKEN AND BARNWELL COUNTIES, SOUTH CAROLINA

The U. S. Atomic Energy Commission announced on Nov. 28, 1950, that its new production plants to be designed, built and operated by the E. I. du Pont de Nemours Company of Wilmington, Delaware, will be located in Aiken and Barnwell counties, South Carolina near the Savannah River. About 250,000 acres will be acquired for the site. Exact boundaries remain to be determined. The new site will be known as the Savannah River Plant.

As was noted by the President last July in asking the Congress to appropriate $260,000,000 to start construction, these additional plants, like the existing facilities, will provide materials which can be used either for weapons or for fuels potentially useful for power purposes.

The Commission emphasized, however, that the operations at the Savannah River plants will not involve the manufacture of atomic weapons.

The site was chosen by the Commission after a four-month study of more than 100 sites by the du Pont Company and AEC engineers with the assistance of other federal agencies.

Much of the information used as a basis for studies of sites was developed and supplied by the Army's Corps of Engineers.

The following factors were of major importance in determining the site:

1. Military considerations including vulnerability to attack;

2. Operating requirements of the facilities themselves the details of which cannot be disclosed for reasons of national security;

3. Accessibility to population centers to avoid establishing a new government community such as those at Oak Ridge, Tennessee; Los Alamos, New Mexico; and Richland, Washington.

4. Public health and safety considerations involving the location and adequacy of the site.

Acquisition of the land will be undertaken by the Corps of Engineers.

The specific boundaries of the site will be announced later after completion of detailed engineering studies. However, the general area in which the Commission proposes to build the plants and related facilities with their security areas is shown on the attached map.

To make way for the plants and the surrounding security and safety zone, it will be necessary for about 1,500 families to relocate in the next 18 months. The Federal-State agricultural agencies are organizing to give help to the families who must relocate. The first families affected will be those in Areas 1 and 2 on the map. These general areas will be vacated at an early date to make way for construction. Exact boundaries of these areas cannot be defined until engineers have established location of facilities.

In addition, the Commission and du Pont will proceed within a short time to obtain rights of way for railroad spurs, roads and other facilities necessary for large-scale construction activities.

The site is located in Aiken and Barnwell counties, about 15 air miles south of Aiken, South Carolina, and about 20 air miles southeast of Augusta, Georgia.

It is expected that the construction force will reach approximately 8,000 during the first six months of construction which will be started early in 1951.

The new AEC plant, while having a primary purpose at this time, will add to the nation's capacity for producing fuels which someday will be needed to utilize atomic energy for useful power. If the new facilities are not needed for defense, they can produce fuel for industry. The new facilities will be of advanced design and their operation will provide the Commission with further information and understanding that will speed the progress of the national atomic energy program both for military and civilian purposes.

Funds for starting construction of the new plants were included in the $260,000,000 supplemental appropriation Con-

gress voted last September at the request of President Truman.

The Atomic Energy Commission emphasizes the following in connection with its future operations at the new site:

1. While there are radiation hazards connected with all atomic energy production and utilization facilities (such as Oak Ridge, Los Alamos, and Hanford), the protective measures followed have been so effective that the safety record is better than in industry generally.

2. No atomic weapons will be manufactured at the site. The materials produced at the site will be utilized elsewhere.

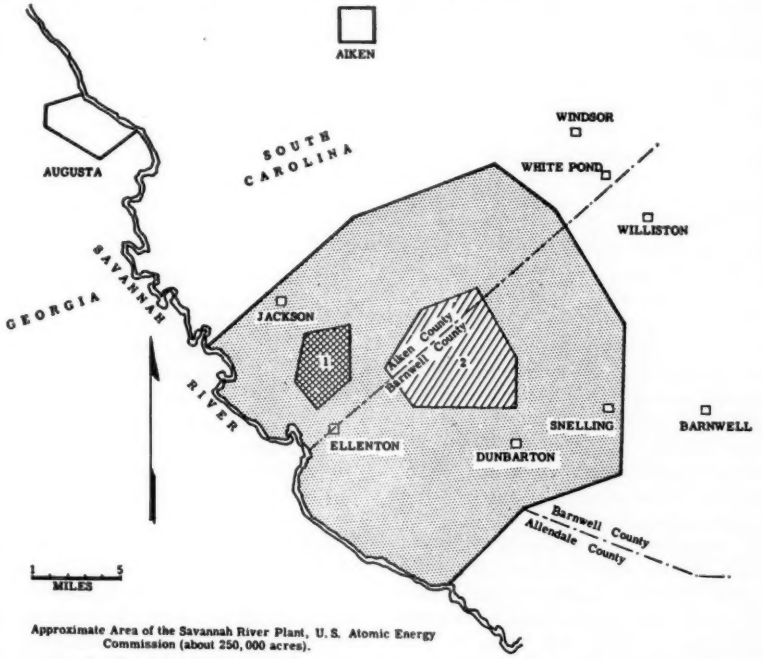
The Commission will decide whether power should be purchased or generated at the site after engineering studies on this phase of the project have been completed.

Du Pont brings considerable experience to its task for the Commission, since it designed, built and operated the Hanford plant for the production of plutonium in World War II. In that project it had, as it has now, the assistance of many atomic scientists including the group assembled at the Argonne National Laboratory and its predecessor, the Metallurgical Laboratory.

As in the Hanford experience the contract will be administered by du Pont's Explosives Department, a new division of this department having been created for the purpose. Design and field construction are being handled by the company's Engineering Department. Don A. Miller, who will be Works Manager of the Operating Plant, and Robert K. Mason, Field Manager in charge of its construction, will be among the first du Pont officials on the scene.

Curtis A. Nelson is Manager of the New Operations Office for the AEC and his deputy is Robert C. Blair.

They will open local offices soon as will du Pont.



Approximate Area of the Savannah River Plant, U. S. Atomic Energy Commission (about 250,000 acres).

Areas 1 and 2 on map indicate portions of site to be vacated at an early date to make way for construction.

SOME MICRO-MINERALS OF FRANKLIN, NEW JERSEY

By LOUIS PERLOFF
81 Bay 22nd Street, Brooklyn 14, N. Y.

These notes are an elaboration of something said before in a letter to the Micromounter. The point made was that you never really know the minerals of a locality until you've seen them under the microscope. Consider that most famous of localities, Franklin, New Jersey. A general collection that failed to include a representative suite of at least its most important species could make slight pretension to inclusiveness. Even collectors who've been at it a relatively short time know some of its most famous ones, because of their remarkable behavior in fluorescent light. But, to repeat. how many collectors ever really see the minerals of Franklin?

The general collector who knows willemite or tephroite or zincite in massive material only, in thumbing through Palache's "Minerals of Franklin and Sterling Hill" (U. S. Geological Survey Professional Paper 180), may be inclined to remark at some of the drawings of these and other minerals that this is only book stuff and that no one ever sees crystals like these in specimens anyway. This paper is an attempt to show that with the aid of a microscope one may hope to see a great many of them, in all their wonderful perfection of form and diversity of habit, the brilliance of luster and color often utterly unlike the dull and undistinguished appearance of the massive material, and the complexity of association of species one with another, so that a mineral seen in one environment often bears little resemblance to its remembered appearance in another setting.

The simplest way to get on with it is to begin with the most familiar species, going on then to others that seem especially noteworthy under the microscope. This isn't a very systematic way of doing it, to be sure; nor will there be any attempt to cover a great many species. Others have many more species and, very probably, better mounts. But, poor as they are, these are what I have. I describe what I have seen in my own collection. Like the soldier overseas, whose stateside girl friend wrote to inquire what the foreign girls had that she didn't, I can only answer: they're here. And so to the micromounts.

Franklinite

Many notable crystals of octahedral habit are represented in many collections. Have you ever seen a cube of franklinite? I have hundreds of them. Very tiny ones, of course, but of a perfection and brilliance to make the big ones look like so many dull clinkers. In one habit the mirror-bright cubes show tiny bevelling faces of the tetrahexahedron; in a second type these two forms are combined with the octahedron. All degrees of dominance of one form at the expense of the others are possible. On a background of white dolomite, with an occasional crystal of transparent doubly-terminated willemite or yellow barite, this is the sort of franklinite to make you forever after turn up your nose at four-inch octahedrons. My best mount of this material is a chip of dolomite about ½ inch across in which are two small crystalled cavities about ⅛ inch apart, each holding about 20 franklinite crystals. All the franklinites in one cavity are of the first type: cube and tetrahexahedron. All in the other cavity show combinations of the three forms. Why this remarkable variance in habit should occur in cavities separated by ⅛ inch is something I'll leave to wiser men. For those who have Palache's paper at hand, both types of crystals are shown in figures 45 and 46 at page 46.

Three other mounts show another unusual occurrence of franklinite. These are the cubo-octahedral crystals of Palache's figure 43. These occur on the surface of white calcite, either as aggregates of several individuals or as smaller scattered crystals lying among needles of white willemite which partially coats the calcite. Where some of the larger crystals have been chipped, the internal color is seen to be a deep, translucent red. Octahedral faces of the larger crystals show the

vicinal triangular forms sometimes seen on magnetite.

Zincite

Since any material good enough to show zincite in micro-crystals almost invariably contains a number of other choice things, I've always kept a sharp eye out for this one. A few years ago I got a small, pure mass with a number of cavities. From it have come crystals of zincite, hodgkinsonite, magnesium-chlorophoenicite, globular smithsonite and aggregates of platy crystals that may be barite. The zincite is in very steep pyramids growing directly upon etched surfaces of the massive material. One mount shows such an acicular pyramid of zincite which has impaled on it a minute doubly-terminated crystal of hodgkinsonite of the elongated domatic habit of Palache's Figure 173. Other zincite pyramids are invested by delicate white tufts of magnesium-chlorophoenicite. The most treasured mount from this material is calculated to make the observer think he is seeing things; the tiny zincite pyramids are attached to the mass by their tips, with the basal plane up in the air! A zincite mount from other material is worth mentioning, for it quite unlike the material above. It is in a vug in red willemite with hetaerolite and fluorite, and is attached to the matrix by one of the pyramid faces, so that pyramid and base are both visible. The color is a lively orange-red.

Willemite and Tephroite

One has to keep a tight rein on one's adjectives in describing these two. Micromounters to whom I've sent some usually go all out over it. Study of the drawings in Palache (Figures 103 and 104 for tephrotite; figures 117, 118, 119, 120, 125 and 126 for willemite) can give only an idea of the forms possible. One must go the specimens themselves to marvel at the jewel-like perfection of the tiny crystals. No faceter who ever lived could hope to match the sparkling terminal faces of the willemites or the brilliance of the multi-prismed, bluish-to-purple tephroites. Add to this the frequent occurrence of doubly-terminated crystals in both minerals, and the associated red-brown garnet, satiny-white calcite and the reddish coralloidal friedelite (or bementite), and you have a suite of specimens that are among the first you reach for when you want to show some doubting Thomas what he's missing by limiting himself to cabinet specimens. (Collectors who can recall their own delighted cooing and gurgling on first witnessing the effect of fluorescent light on willemite have a clue to the behavior of the uninitiated seeing their first micro willemite under ultraviolet).

I have about fifty mounts in this series, practically all of them from a single 4 x 4 mass of ore, an achievement that might lead a less restrained chronicler than myself to paraphrase that never in the history of micromounting has so much been made from so little. Each time I congratulate myself on having about as many tephroites and willemites as a collection can hold, a fresh glance at some of the unmounted remnants turns up something to make me wonder how I ever overlooked anything that good. Ah well, if the boxes hold out, I may be known among micromounters as the Croesus of the orthosilicates.

It is worth noting here that willemite, considering the diversity of occurrences from other localities: the glass-clear prisms in massive brown willemite from Lusaka, Northern Rhodesia, the blue-to-clear prisms of Tiger, Arizona, the cream-white, acicular prisms of Mapimi, Mexico, and the red-to-clear, doubly-terminated short prisms of Beaver County, Utah, is quite a species, indeed.

Rhodonite

Color alone would make this a standout in any collection. Here, too, the micro-collector can sniff at even the most spectacular museum specimens. Whether it has been etched from the calcite by acid or carved out by the most meticulous chiseling, the surface of the macro specimen is almost always pitted and dulled. Now compare these with the mirror-brilliant, transparent crystals of exquisite rose-red to be seen in micro crystals? A description of three will give an idea of the combinations possible. In the first, sharp tabular crystals of fine color occur in

vugs in ore with splendid crystals of olive-green polyadelphite. An equally handsome specimen shows lustrous crystals with finely crystallized axinite. In the third mount rhodonite alone covers the surface of compact ore, with many of the crystals doubly-terminated and exactly like those of Pajberg, Sweden.

Axinite and Hancockite

One of the things recurringly noted is the remarkable way in which the colors of associated minerals tend to complement each other. One of the showiest of combinations is that of maroon-red hancockite against the yellow or yellow-green of axinite. In one mount the axinite, apparently from included hancockite, is itself a deep brick-red. The hancockite is most often in minute, spicular individuals on axinite, but in one mass I worked with numbers of flattened prisms were combined in relatively huge spatular aggregates, somewhat after the fashion of stilbite.

Clinohedrite

I have, alas, only a single mount of this species. But, since it is a transparent, doubly-terminated crystal fixed to the axinite matrix by only a few of the under faces, so that all the other faces may be viewed by turning the mount, it isn't too bad. Lending interest is the fact that clinohedrite is one of the very rare members of the monoclinic-domatic class, providing an opportunity to study a crystal type that is, for most collectors, merely a drawing in a textbook. (Figure 160 of Palache—give or take a face—shows this crystal).

Hodgkinsonite

Were I asked to nominate the champ in the How - diversified - can - you - get? sweepstakes, I think I'd pick this one. The most familiar type of crystal is the acutely pyramidal, of varying shades of lilac to purple, from transparent to opaque, usually in cavities in ore with willemite and other minerals. One that I have is attached to the matrix with long axis parallel to the surface of ore, so that both terminations are visible. Quite unlike this are the minute, clear crystals of domatic habit, previously mentioned as occurring with zincite. One exceptional mount shows a red-brown crystal on zincite with striated pyramidal faces. The most interesting mount of this mineral is one that I was for a long time unable to identify because of its lack of resemblance to anything known. On crystalled hetaerolite with colorless fluorite and willemite were transparent, yellow prismatic crystals, many of them doubly-terminated. To the eye—which can be a sharper judge of these things than is imagined—the prisms suggested monoclinc rather than orthorhombic symmetry. A natural guess was that it was one of the pyroxenes or amphiboles. Then one day I spotted Figure 170 in Palache and read the accompanying text: "The stout prismatic crystals of figures 170 and 171 were in cavities with hetaerolite and willemite. They were clear yellow and because of their pronounced pseudo-orthorhombic habit they were not recognized as hodgkinsonite until they were measured." The mystery was solved.

Leucophoenicite

The colors of some minerals are so striking that, for one who has seen them, a shade of color is forever identified with a species. I catch myself occasionally describing something as epidote green to people who know nothing of minerals. For the collector the color image is immediate and vivid. I might plod through a paragraph trying to explain the difference between the rose-red of rhodonite and the rose-red-purple of leucophoenicite. Just take my word for it that the eye readily detects the difference. It is, in fact, a better test than crystallography, for some of the monoclinic crystals of leucophoenicite are quite like the tabular crystals of triclinic rhodonite. Additional aids in spotting leucophoenicite are the striations parallel to the long axis and the fact that the crystals show considerable rounding, very rarely showing the sharpness of rhodonite. In the mounts I have leucophoenicite, accompanied by globular white smithsonite, coats the surface of ore. One of the mounts is enhanced by two orange-red zincite crystals, one of which shows only as the hexagonal base of a pyramid embedded in the matrix. In another mount leucophoenicite is associat-

ed with gageite, cahnite and scalenohedral calcite.

Cahnite

There is never any great difficulty in the identification of crystalled cahnite. It is always colorless and always in the characteristic sphenoids, either simple or twinned. The only micro crytals that might be mistaken for it are the clear wedge-shaped clinohedrites, but the orange fluorescence of the latter takes care of that problem. In the mounts I have the cahnite is in two quite different associations. In one hundreds of minute clear crystals cover the surface of yellow garnet accompanied by the prismatic biotite Palache mentions. In the other just two untwinned cahnites are held in a cavity by needles of gageite, with striated, prismatic leucophoenicite lending a touch of bright color to the mount.

Fluorite

This one can give a good account of itself in the diversity sweepstakes. I have it as white cubes in a mount with white willemite, rhodochrosite and balls of silky sussexite, as colorless dodecahedrons coating hetaerolite and as transparent octahedrons, which are white at the center, shading to reddish at the surface, in cavities of green actinolite. The octahedrons are notable in showing trisoctahedral faces. The familiar purple-red fluorite of the ore masses is, as far as I know, always uncrystallized. Which makes it interesting for study, but of no interest as micro material; I have trouble enough finding boxes for crystals without worrying about mounts of massive material.

Azurite, Malachite

Karity makes these two very special from Franklin. The oxidized limonitic material in which they occurred has long since disappeared and only pieces from old collections are ever seen. I was lucky enough to get hold of a small chunk of it a while ago. (I think it only fair to mention that many of the fine things I have described have come from the fine stock of Mr. Hugh Ford, who has a judicious eye in spotting these things.) The malachite occurs as bright green crusts and irregular masses, but the azurite is finely crystalled and would be notable from any locality. The crystals, though small, are sharp and brilliant, most of them thin-tabular in habit, with the smaller tablets a lovely transparent blue.

Chloanthite, Niccolite

A 2 x 2 mass of niccolite-fluorite was carefully broken and produced one lone mount. It shows nine silver-white crystals of chloanthite implanted on the surface of altered niccolite. The form is the octahedron modified by small cube faces; two of them are twinned. The niccolite, where embedded in the fluorite and calcite, has the characteristic copper-red color. On the surface it is very much altered to dull-gray, which may be partial alteration to the nickel silicate, desaulesite, mentioned by Palache. To this pair of eyes, at least, this surface alteration seems truly as metallic as the underlying niccolite or the accompanying chloanthite, which would make it about the most metallic-looking silicate I've ever seen.

Sphalerite, Pyrite, Millerite

In recent years the last remaining opportunity to prowl the dumps at Franklin has been across the road from the old Buckwheat open pit. Although very little in the way of micro material can be hoped for here, the gray dolomite so common on this dump always holds possibilities. From it I have got several excellent sphalerites in brown twins, pyrite in brilliant tarnished crystals and millerite as minute reticulations of needles in cavities in dolomite. These cavities also hold the attractive quartz crystals, which are otherwise a rarity at Franklin. Even dolomite can make a mount; one that I have shows a bridge of minute rhombs of grayish dolomite spanning a cavity in massive dolomitic limestone.

Well, there you have it. In setting down the species described I've tried to avoid guesswork and outright faking. I've resisted the temptation to describe some wonderful mounts I've seen in other collections, as well as several good things I've let get away. A cahnite-barite that I foolishly neglected at Ford's brings a lump to the throat each time I remember it. It is hoped that others who possess outstanding material will add to these notes in the future.

A TRIP TO SYRACUSE, N. Y.

By PETER ZODAC
Editor, Rocks and Minerals

On Thursday, September 20, 1945, we left Peekskill, N. Y. for Syracuse where we were to be the guest of Mr. and Mrs. R. L. Sylvester and at the same time do some collecting in that area. Although we had passed through their city at least four times in the past—by train—we never actually set foot in it and so our visit was of more than passing interest.

First Day—Thurs., September 20, 1945

The 10:29 a.m. train pulled out of Peekskill with us aboard. This was an express, making only a few stops, and it was due to arrive in Syracuse by 4:33 p.m. The railroad (the main line of the New York Central) follows almost due north the east bank of the Hudson River, in some places only five feet away, and the scenery to Albany is really beautiful. Rocks border both sides of the river for many miles which here and there have been or are still being quarried. At Stoneco, a few miles south of Poughkeepsie, the railroad goes through a huge limestone quarry which though working is not known for minerals.

At Albany (102 miles north of Peekskill) is the State Capitol. It is a beautiful city on the west bank of the Hudson; we crossed the river here and from thence on the railroad runs almost due west. A few miles out of Albany the railroad enters and runs for many miles through the beautiful Mohawk Valley.

The train was about five minutes late reaching Syracuse but Mr. Sylvester was patiently waiting at the station to meet us and in no time at all we were at his house. We spent the rest of the day looking over his fine mineral collection—it was then a small one as he had been collecting for only about a year. In the collection were a number of unusually interesting specimens which he had personally collected—some beautiful iridescent colophanite garnets, from Willsboro, N. Y., and very attractive mottled greenish-red serpentine from Keeseville, N. Y., appealed greatly to us. That evening Dr. E. T Apfel and Dr. Maynard, of the Department of Geology at Syracuse University, called and we had a most pleasant two hours talking "minerals."

Second Day—Fri., September 21, 1945

The entire day was spent in the field. We left about 7:30 a.m. with the speedometer reading 7.00 (all mileages are from Mr. Sylvester's home at 154 Parkside Ave., Syracuse 7). First we stopped to pick up Mr. Fred C. Nhare, who lives on the southern outskirts of the city. Mr. Nhare is also a mineral collector and a most interesting gentleman, too. He certainly knows the country around Syracuse.

We took route 20N (173) eastward out of the city heading for Jamesville. The route is known as East Seneca Turnpike (also as the Jamesville Road). On the southeastern outskirts of the city, on a hilly slope, was an abandoned limestone quarry which we stopped to examine. The quarry was about 100 x 200 feet in size and about 75 feet deep. Unfortunately we could not enter it in comfort as it was being used as a dumping ground for trash, etc., and it was much overgrown, too. We could see nothing of interest in the dark gray horizontally banded limestone and so no specimens were collected.

Green Lake, A Geological Marvel

We continued eastward towards Jamesville but our next stop was Green Lake (14.1 miles) in Clark's Reservation State Park, near DeWitt. The lake is at the bottom of a huge hole, many hundreds of feet in circumference and at least 100 feet deep to the top of the water. To reach the shore of this lake we had to walk down some concrete steps which wound down alongside a vertical wall of gray limestone. The only mineral seen in this limestone were dark gray masses of chert (quartz); some fossils were also noted. This lake is a geological marvel and its location at the bottom of the huge hole astounded us.

Jamesville (16.1 miles) is a little village in east-central Onondaga County and on its northern outskirts is a huge lime-

stone quarry, said to be the third largest in the United States. The quarry was in operation and Mr. Nhare called at the office to obtain permission to visit it—he was told if we came back at 2:00 p.m. a guide would be furnished us. So we left to come back later.

Onondaga County Quarry

In Jamesville are two other limestone quarries which we visited. Mr. Nhare knew the superintendent (Mr. Wickan) of one, the Penitentiary quarry and we headed for it. He was found in his office and kindly gave us permission to visit the quarry, in fact he joined us. The quarry is about 2,000 feet south of the Onondaga County Penitentiary but on reaching it we decided to continue on to the next one, about 2,000 feet west of it. This was the Onondaga County Highway quarry of which Mr. James Pierce is the superintendent. The Highway quarry is a small one, about 100 x 300 feet in size with a face 25 feet high. It is located alongside the east side of Route 91, opposite the reservoir. The only minerals found in the dark gray limestone were tiny glassy crystals of calcite. One pleasant incident of our visit to this quarry was that Mr. Pierce, who is interested in minerals, became a member of the R & M A, through the courtesy of Mr. Wickan.

Penitentiary Quarry

The Penitentiary quarry is about 2,000 feet east of the Highway quarry and this was our next stop. It is a huge working, about 1,000 feet in diameter with walls 50 feet high. The most common mineral here is chert (quartz) and it occurs in interesting specimens. The chert is much darker than the dark gray limestone and it occurs in elongated, rounded, egg-shaped, and other shapes. Tiny white calcite crystals, tiny crystals of dolomite which weather brown, small masses of golden-yellow drusy pyrite crystals, and tiny smoky quartz crystals—all on limestone, were collected.

We next headed for Chittenango Falls in western Madison County. On the way we passed through Manlius (the handsome buildings and beautiful grounds of the Manlius School for Boys bordered both sides of the highway). In Cazenovia (37.0 miles) we stopped for a soda and our chocolate ice cream soda was the best we ever tasted. Cazenovia is a pretty village on the southeastern shore of Cazenovia Lake; a famous Cazenovia Junior College is located here and we passed it.

Chittenango Falls

Our next stop was in Chittenango Falls State Park (41.8 miles) where we inspected the falls. The Chittenango Creek was overflowing and much water was going over the falls which were about 150 feet wide and 100 feet high. A path leads to the creek, at the bottom of the falls, and we followed it down and crossed to the other side via a footbridge. The view of the falls from this bridge was a beautiful one.

The falls, on N. Y. 13, are 3 miles north of Cazenovia and 0.9 mile further on the same road we made our next stop, at a celestite occurrence. Here in a limestone outcrop which extends for about 500 feet and near the right edge of the highway, is a 2-foot vein containing calcite and celestite crystals. The vein is about 50 feet above the road and it could be reached over a steep talus slope. We traced the vein for at least 75 feet but it no doubt extends further. Our best specimens were obtained from the talus slope and there was much of it, too. The calcite varied from colorless to pale yellowish in color and dog-toothed crystals predominated, and in nice specimens. A few twin crystals of calcite in vugs were also collected. The celestite occurs massive, crystallized, and as small platy crystals. It varied from pale blue to deep blue in color and from opaque masses to transparent crystals (some large enough to cut). All crystals and masses that had been exposed to the weather were pale in color; those broken open by us were deep blue in color. (When the celestite locality was revisited in April, 1950, we found the road had been straightened, repaved, and the talus slope entirely removed. You need a long ladder now to reach the vein).

Jamesville (Solvay) Quarry

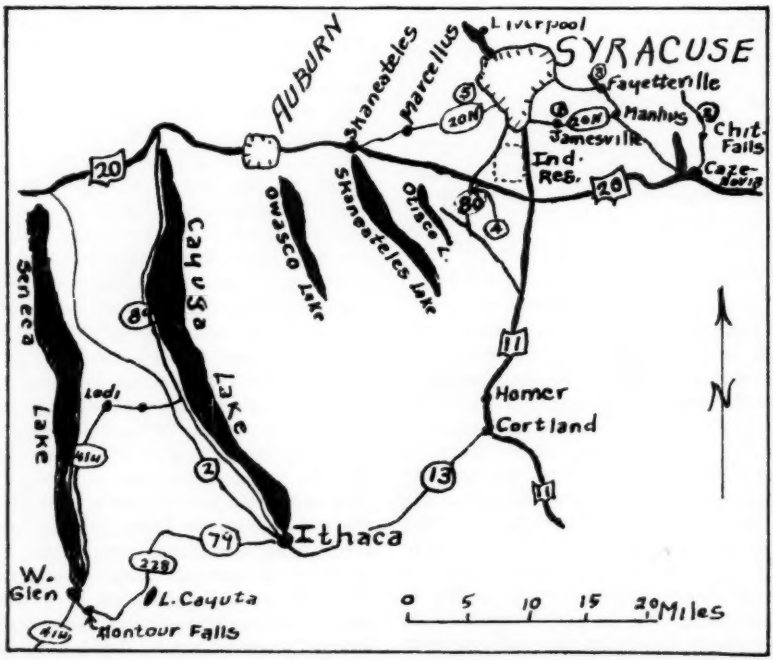
From here we returned to Cazenovia (stopped for another delicious chocolate soda) and then continued our return journey to Jamesville where we arrived at the Solvay quarry at 3 p.m. (one hour late). Mr. Palen, who was to guide us, soon made his appearance and we were off. We have some mighty big quarries around Peekskill but the Solvay limestone quarry is the largest we ever saw. It is 4 miles long, thousands of feet wide, and 115 feet deep. Mr. Palen gave us a lot of interesting information about the quarry but unfortunately we failed to jot it down. But one thing we do remember is that one limestone layer is used for making baking soda.

Although the quarry is a huge one, we failed to find any minerals of much interest. Calcite as small white crystals and small cleavages were common and dolomite as small glassy grayish crystals that weather brown and encrusting dark gray limestone was the best specimen collected; a loose, broken and etched rock crystal was seen and also some tiny deep black smoky quartz crystals associated with dolomite. A few fossil corals, about 2 inches in diameter, embedded in dark gray limestone, were also seen.

(Note: The Sibley limestone quarry at Sibley, Mich., which was visited Friday, August 22nd, 1947, belongs to the same company. It is a huge quarry, too, but not so large as the Jamesville quarry. See November 1947, ROCKS AND MINERALS, page 1012).

Selenite at Fayetteville

Fayetteville (76.4 miles) is about 8 miles east of Syracuse. It is a nice little



Map of area around Syracuse, N. Y., showing routes taken by the author and some localities visited.

1—Jamesville quarry
2—Celestite locality
3—Selenite locality
4—Lord's Hill
5—Split Rock quarry

town. A white house (109 Academy Street) is marked as being the boyhood home of Grover Cleveland. Seneca Street is the main thoroughfare in Fayetteville and we turned left off it onto Manlius Street which we followed for 1½ miles, parking about 100 feet short from a railroad bridge which crosses the highway and the adjacent old Erie Canal (the road continues on to Manlius Center). We walked up a dirt road for 100 feet and on reaching the railroad (one track) we turned right and followed it for about 500 feet. The railroad goes through a deep cut through grayish brown shaly limestone and for hundreds of feet the ditch (left side) is strewn with nice selenite cleavages which vary from tiny specimens up to plates 12 inches or more in length. Up the very steep slope, from 25 to 100 feet above the railroad, selenite veins up to 12 inches wide could be seen outcropping. It was not necessary to make the climb to get specimens, as so many good ones could be found loose along the bottom of the slope.

We soon collected about 50 nice specimens and when the time came for leaving, it became a problem to get them to the car. Completely forgetting that selenite was easily marred, due to its softness, and not realizing that many specimens would be collected, we had brought nothing with us to carry them away but two cloth bags. To put all the specimens into the bags might damage the selenite and so we tried the relay method. We would pick up 7 or 8 specimens, walk a few hundred feet, lay them down and go back for more. This got tiresome after a few trips and then a bright idea occurred to us. We had noticed that some of the loose limestone was in large thin slabs. Picking up two of the largest but thinnest slabs, we placed the selenites on each (they fitted nicely) and then carried them off to the car as if they were on trays.

Indian Reservation Visited

From here we headed back for Syracuse but before calling it a day, we first made a trip through the Onondaga Indian Reservation. The Indians here live in cabins and little houses, some very delapidated but a number were attractive with little gardens around them. A few of the Indians were seen, mostly small children. A small sand and gravel bank near the Reservation was seen and we stopped to look it over. It was about 100 x 200 x 75 feet high. The gravel was all limestone but a few milky quartz pebbles were also seen.

This finished our collecting for the day. We then headed for Mr. Nhare's home where we examined his collection. He has some very nice polished Brazilian agates which we greatly admired. Here we met Mrs. Nhare, had a most delicious dinner, and then returned to Mr. Sylvester's home. (109.1 miles). Mileage for the day—102.1.

Third Day—Sat., September 22, 1945

We left the house again about 7:30 a.m. (109.1 miles on the speedometer) and headed south on N. Y. 80 (Valley Drive) and within a few miles we parked our car at the entrance to the S. F. Clough Sand and Gravel Pit (113.9 miles). This is a huge working along the left side (east) of the highway and our purpose in stopping was to examine some interesting "stalactitic" masses of consolidated gravel that Mr. Sylvester saw some few weeks ago. But these masses were not in evidence; they had been obliterated in the course of operations. At the extreme southern tip of the huge pit, an interesting section (100 feet high) of horizontally bedded sand and fine gravel was seen. Nice dark gray, almost black, pebbles of limestone were collected at this point.

Abandoned Quarry Noted For Fossil Rain Drops

Just 0.1 mile further down the road (114.0 miles) we stopped again to visit an old abandoned limestone quarry to the right of the highway. The quarry could not be seen from the road; we followed an old trail or path up the side of a small hill to reach it. The quarry was about 1,000 feet long, 200 feet wide with a face 75 feet high. Some few weeks ago Mr. Sylvester and his cousin, Mr. C. H. Robinson (formerly of Washing-

ton, D. C., but now of Puyallup, Wash.) noted a huge slab of limestone bearing fossil rain drops. They had set this slab aside with the idea of picking it up on a subsequent trip—when this trip was made they found that the slab had disappeared.

There was quite a talus slope at this quarry and after much scrambling over and around some huge blocks of limestone, Mr. Sylvester casually remarked, "Watch out for snakes, there are a number of them here." Our interest in collecting suddenly ceased and likewise our scrambling. However we did manage to hold to a nice 3 x 4 inch slab of gray limestone containing fossil rain drops, another dark gray limestone with a cellular face whose pits were coated with sooty graphite while another face contained a ½ inch vein of light gray, almost white, crystalline dolomite (with tiny crystals in a small cavity).

Lord's Hill Fossil Corals

We continued down the road, passing through South Onondaga (nice hamlet, 119.4 miles); soon we were climbing Lord's Hill where somewhere along the road interesting fossil corals could be found. We stopped at one place (120.8 miles) to examine the terrain. No fossils were vissible but lots of gravel was present—an interesting quartz conglomerate pebble (3 x 3 inches)—white quartz in red matrix—was picked up. About 200 feet to the right of the road, a deep ravine was seen.

We continued up Lord's Hill (N. Y. 80), crossed U. S. 20 (121.6 miles) and stopped again (121.9 miles). Then we saw a sight which made our eyes bulge! For here, along both sides of the road and extending for hundreds of feet, fossil corals were present by the thousands and varying in size from tiny up to those 6 inches in length. They were imbedded in soft grayish-green shale or hard mud and were in such huge amounts that the rock was barely visible. It was simply a conglomeration of fossils lying in all directions—mostly on the side or point downwards. The bottom and sides of the ditch

Our headquarters—154 Parkside Avenue., Syracuse 7, N. Y.—the comfortable home of the Sylvesters. The cellar is now so full of "rocks" that the house may have settled a few inches since the photo was taken.

(on both sides of the road with a lot of water flowing through each) was simply a mass of fossils, too. The banks, where bare, some places 5 feet high, were also a mass of fossils—no doubt the entire banks are likewise a mass of fossils but we could not tell as a heavy growth of grass covered them, but where bare, fossils were present. Near the top of the road banks which averaged about 6 feet high, fossils were found lying loose in the grass. Fossils were seen, also, in the macadamized road, in fact the road was paved with fossils. The best places to collect fossils were in and along the walls of the ditches.

On pulling out the fossils from those lying point downwards, the points were often missing. Some fossils were easy to pull out but most of them were firmly embedded; a few were found loose. We never saw so many fossils anywhere as we did on Lord's Hill. (Dr. E. T. Apfel, of Syracuse University, whom we already mentioned, had told us that there are 12 forms of horn coral in the Hamilton shales on Lord's Hill).

The view northward from Lord's Hill was very beautiful and especially from its top, a little further up (122.6 miles).

Syracuse Environs Toured

From here we returned to Syracuse where we spent most of the afternoon at the University where Dr. Apfel guided us through the mineralogical and geological departments. The museum is not a large one at present as a few years ago a fire practically destroyed the entire mineralogical and geological exhibits.

The rest of the afternoon we spent touring the northeastern shore of Onondaga Lake, a large and beautiful body of water which bounds Syracuse on the northwest. In Liverpool, a nice town, we visited the Salt Museum (alongside the lake) where many interesting relics of the former salt industry of Syracuse are on display. Due to its former salt industry, Syracuse was once known as the "Salt City," but salt is no longer mined, so Mr. Sylvester informed us. On the way back we stopped to inspect Fort St. Marie de Gannentaha (erected by the French Colonists in 1656, abandoned in 1658, rebuilt in 1933). The fort is in Onondaga Lake Park, about 300 feet from the lake.

Another site examined was the Jesuit Well, near the fort. (Rediscovery of well used, according to legend, by the Jesuits in the 17th Century. Restored in 1933).

Fourth Day—Sun., September 23, 1945

This day we made a visit to the famous Watkins Glen in Schuyler County. We left the city about 8:30 a.m. (Mrs. Sylvester and their oldest son, Richard, were with us. The speedometer read 169.7 miles at the house).

We took N. Y. 80 and went south to Tully where we turned right on U. S. 11. We passed through Homer (206.6 miles) and Cortland (209.4 miles), two nice towns. A short distance from Cortland on N. Y. 13, a small quarry, 300 x 25 x 15 feet high was seen 50 feet to left of highway (212.8 miles). We searched in vain for some minerals in this quarry but all that could be seen were reddish (hematite) and brownish (limonite) stains on dark gray shale. One interesting specimen collected, however, consisted of small fossil shells (brachiopods) in dark gray shale.

Near Varna, in Tompkins County, we stopped at a concrete railroad bridge (229.7 miles) to examine the gravels in a road cut in the hope of finding some jasper—all we could find were small pebbles of milky quartz. Varna is a small hamlet (230.0 miles).

When we reached Ithaca (233.0 miles) it began to drizzle. As it was around noon, we had dinner here at the Monarch Restaurant, Ithaca, a beautiful city, is at the extreme lower tip of Cayuga Lake. Cornell University is located in Ithaca and we passed some of its beautiful buildings on the way in.

Near Cayuta Lake, a nice little body of water in Schuyler County, we stopped again to examine the gravel seen in the road cut on N. Y. 228, but again all we

could find were small milky quartz pebbles.

About 900 feet from the junction of N. Y. 224 and N. Y. 228, we stopped at a concrete bridge (258.5 miles) to examine the boulders and pebbles in the 50 foot wide brook. This was just before Odessa, a small hamlet, was reached. We found our usual milky quartz pebbles, also pegmatite masses consisting of hornblende (black), microcline (red), smoky quartz and tiny grains of pyrite. Perhaps the most interesting specimen collected was a 2 x 3 inch mass of dark green epidote.

On the western outskirts of Odessa, on N. Y. 224 (259.7 miles) we noticed a foundation dug in dark brownish shale. The foundation was 100 x 100 feet in area and 100 feet left of road. The only mineral seen here was a small botryoidal incrustation of grayish hyalite on the shale.

Montour Falls

At mileage 261.6 (N. Y. 224) an interesting exposure of gray shale extends for 200 feet along the right side of the road. At 261.9 mileage, the outskirts of the village of Montour Falls is reached and straight ahead can be seen the beautiful falls for which the village is named. The falls (263.0 miles) in about the center of the nice little village, are at the end of the main street. They are about 150 feet high and are very beautiful as they drop down over a horizontally banded dark gray shaly limestone. A little "park" for viewing the falls is at their base.

Watkins Glen

Watkins, the county seat of Schuyler County, is another nice little village and is famous for its glen which is now a State Park. The village is noted also for its salt wells, the Watkins Salt Company owns most of them (if not all). These wells are plainly visible; they are located along the west bank of the adjacent Seneca Lake on N. Y. 414.

Watkins Glen has a nice entrance which we soon reached (266.2 miles) and where we parked our car as the journey through the Glen must be made on foot. Watkins Glen (450 acres) is one of the best known scenic parks in the East. The waters, which rush down through the Glen, contain no less than 19 distinct waterfalls, with numerous cascades and grottos, and on emerging flow into nearby Seneca Lake. Paths go up both sides of the Glen. We took the right path which followed the stream for 1½ miles, in places it went through short tunnels. It took 55 minutes to reach the end, after an interesting, impressive, and most delightful walk. A railroad bridge at the extreme end of the path, spans the Glen. For the return, we took another path (on the same side) which ran along the top of the Glen and had a gentle slope downward. (One can get a taxi at the entrance to the park and be driven up to the top, near the railroad bridge, from which point he can walk downward through the Glen, a less fatiguing trip).

For a more detailed description of this natural wonder which for scenic beauty of a particular type has few rivals in the East, see "Watkins Glen," by Eugene W. Blank, ROCKS AND MINERALS, September, 1930, pp. 78-82.

Return To Syracuse

From Watkins Glen we headed back for Syracuse but by a different route (N. Y. 414) which for a number of miles ran along the east shore of Seneca Lake. At mileage 270.5, we stopped to admire Hector Falls, 50 feet to the right of road. This falls, about 100 feet high, was very beautiful. From here, for the next 10 miles or more, was a grape and peach section and many large vineyards and orchards bordered the road. At Lodi (286.0 miles) we turned right on N. Y. 96A, went through Interlaken (291.7) nice little town and at 293.8 we turned left on N. Y. 89. At the junction of these two roads we got out to examine some pebbles seen in the little road cut—the best seen was milky quartz.

N. Y. 89 runs along the west shore of beautiful Lake Cayuga, the largest of

the Finger Lakes. At 320.5 mileage we turned right on N. Y. 5 (U. S. 20) but stopped at 327.0 to examine a small road cut where a nice but small red microcline pebble was collected. At 329.5 miles, a gray compact limestone (5 feet high) outcrops for 100 feet along both sides of the road. It was too dark by now to hunt minerals and so the formation was passed up. We passed through Auburn (331.5 miles); Skaneateles (340.0), the hometown of Gen. Jonathan Wainwright and which was decked out for his home coming; and through Marcellus (347.8), the little town in Onondaga County which gave its name to Marcellus shale (Hall, 1839). We arrived in Syracuse (Mr. Sylvester's home, 359.9) at 8:20 p.m.

Fifth And Last Day—Mon., Sept. 24, 1945

Our last trip was made today to the limestone quarries at Split Rock, N. Y., (3 miles west of Syracuse). There are two large quarries here (one abandoned) 200 feet apart. A dark gray limestone is the rock of both quarries. The working quarry, which is about 1000 feet in diameter, is noted especially for its very fine fossil corals, and we found some nice ones. The only minerals we found were whitish crystalline calcite and dark gray masses of chert, both in the limestone. Dr. Apfel told us that fluorite has been found lining cavities of fossil corals but we found nothing.

The New York State Department of Public Works storehouse is located on the site of the abandoned quarry which is about 1,000 feet in diameter and divided in two by a wire fence; the working quarry is to its left.

We left Syracuse on the 12:43 p.m. train. Our trip had been a most interesting and enjoyable one, not only for the many localities visited but especially for the cordial hospitality shown us by Mr. and Mrs. R. L. Sylvester. To these kind friends we extended our most grateful thanks!

CHICAGO MUSEUM ACQUIRES NOTED FOSSIL COLLECTION

Chicago Natural History Museum of Chicago, Ill., recently acquired the major part of the fossil collections of the Hovey Museum of Wabash College, Crawfordsville, Indiana. The specimens are now being unpacked, accessioned, and added to the study collection of the department of geology. Among a small number of vertebrate fossils is the type specimen of a primitive American camel, Procamelus hesternus (Leidy). Invertebrate fossils constitute most of the collection, including many fine specimens of Mississippian crinoids from Crawfordsville, a classic locality from which complete specimens were taken in great abundance two generations ago. There are few places where one may collect complete fossil crinoids, as these strange animals almost invariably disintegrate into millions of tiny pieces of crystalline calcite upon death unless buried rapidly in perfectly still water. The classic localities such as Crawfordsville are now almost entirely "worked out."

The Hovey Museum was named for Edmund Otis Hovey, one of the founders of Wabash College, who taught the courses in natural science. It was he who discovered the famous crinoid beds of Crawfordsville and presumably collected most of the fine crinoid specimens included in the collection.

In the study collection at Chicago Natural History Museum these fossils will henceforth be available for any scholar to examine and will facilitate the work of the department of geology in making determinations of fossils submitted for identification

WORLD NEWS AND MINERAL OCCURRENCES

ALABAMA: Nice specimens of brown banded onyx (calcite) were obtained recently from Richard Goodsell, 905 Jackson Road, Florence, Ala. The specimens come from a small cave on the hillside overlooking the road from the Emmett Oneal bridge over the Tennessee River, near Sheffield, Colbert Co., Ala.

ARIZONA: Very nice nodules of black obsidian in gray perlite are found about 3 miles southwest of Superior, Pinal Co., Ariz. Some of these nodules are 1½ inches and over in size and of course smaller ones are common. Some good specimens, loose and in matrix, were recently donated to R & M by M/Sgt. C. B. Simmons, Philco Corp., 22 and Lehigh, Philadelphia, Pa., (formerly of Denver, Colo.)

Throughout the West loose nodules of black obsidian that have weathered out of their perlite matrix, are known as "Apache tears."

ARKANSAS: University of Arkansas research parties have discovered uranium 10 miles east of Hot Springs, Garland Co., Ark., according to an item in the Joplin, Mo., JOPLIN GLOBE of October 29, 1950. The discovery was made in the potash Sulphur Springs area, not far from the fabulous Magnet Cove.

We are indebted to T. A. Patterson, RR 1, Granby, Mo., for the above item.

CALIFORNIA: A new tungsten-bearing district has been located in eastern Placer County, Calif., on the upper reaches of the Rubicon River 11 airline miles west of Lake Tahoe. Several scheelite-bearing zones in tactite strike northwest cross the Rubicon River in the vicinity of Buck Meadow. One zone is believed to cross both Cottonwood and Grayhorse Creeks and extend to Buck Meadow, a distance of about 3 miles. The tactite zones are in limestone roof pendants near their contacts with granitic rocks. One ore body 3 feet wide but with unknown limits, contains coarse-grained scheelite ore averaging about 8% WO_3. Other zones contain smaller amounts of finely disseminated scheelite. The tungsten district is partly on land controlled by Pacific Gas and Electric Company and partly on land owned by the Southern Pacific Railroad Company. The Rubicon Mining Company with offices in San Francisco has been organized to explore and develop the ore bodies. As tungsten is on the government list of strategic and critical minerals, development of the new deposits would be timely.

—Mineral Information Service, California State Division of Mines, Ferry Bldg. San Francisco 11, Calif., November 1, 1950, p. 2.

COLORADO: W. C. Minor, P. O. Box 62, Fruita, Colo., has sent R & M a boxful of pebbles from the Black Ridge of Mesa County, Colo. These pebbles have weathered from the Dakota sands formation. The pebbles are all quartz and they average about 1 inch in size. Among the pebbles in the lot are basanite (deep black); chalcedony of various colors as gray, brownish, whitish, reddish; jasper (deep brown); milky quartz; and fossilized quartz (tiny rounded shells of a gray color).

CONNECTICUT: Wilbur J. Elwell, 2 Duck Street, Danbury, Conn., reports a recent visit to the famous siderite mine at Roxbury Station, Litchfield Co., Conn. "We found groups of arsenopyrite crystals, good crystals of sphalerite and galena which are rare at the locality, limonite pseudomorph after pyrite crystals, and nice masses of siderite."

DELAWARE: O. A. Pickett, 108 Briar Lane, Newark, Del., has sent R & M a number of quartz pebbles (averging about 1 inch each) from Bethany Beach, Sussex Co., Del. Among the pebbles were basanite (nice deep black); ferruginous (brownish to reddish); jasper (brownish); milky quartz; rose quartz (pale rose); and smoky quartz (two specimens

were translucent). The beaches of Delaware can produce interesting pebbles.

FLORIDA: While on a recent fishing trip to Florida, Skip Dziadik, of Peekskill, N. Y., stopped at the Virginia-Carolina Chemical Corp., rock phosphate mine in Nichols, Polk Co., Fla., to collect a few specimens for R & M. Among the specimens collected were apatite (grayish pebbles and boulders of the type of apatite known as phosphorite or rock phosphate); hematite (reddish stains on rock phosphate); limonite (impure brownish cellular masses); quartz (tiny black grains of basanite; small reddish masses of chalcedony; tiny brownish ferruginous quartz; small brownish masses of jasper; tiny whitish grains of milky quartz; tiny colorless rock crystals; and small grains of smoky gray quartz—all these different quartz minerals were found imbedded in rock phosphate); thin grayish masses of chalcedony as casts after fossil shells were also embedded in the rock phosphate. Mr. Dziadik also sent in a loose shark's tooth that must have been at least 2 inches long but in some manner it was never noticed when unpacking the large shipment and it was thrown away with the paper that was used for wrapping the specimens. The specimens had been sent by express. A day or so after the shipment had arrived, Mr. Dziadik returned home and he rushed up to see the Editor (we are cousins) to inquire about the specimens and especially the shark's tooth which was a very fine specimen. TOO LATE! Three hours ago the garbage collectors had carted off the boxes — the paper — and of course the shark's tooth.

Mr. Dziadik is not a collector nor in any ways interested in minerals. The specimens collected were obtained with the aid of one of the officials of the phosphate mines, who also donated the fine shark's tooth. Shark's teeth up to 6 inches in length and 3 inches wide, have been found in the mine, Mr. Dziadik was told. (All shark's teeth found in the mine are fossilized).

GEORGIA: A handsome specimen of native gold in quartz (in a 2 x 2 inch slab) was received recently from the Department of Mines, Mining and Geology, 425 State Capitol, Atlanta 3, Ga. Part of the letter (dated October 17, 1950) from the Assistant State Geologist Dr. A. S. Furcron, who sent the specimen, reads as follows:

"This slab is sawed through a gold-bearing quartz vein from the Calhoun mine near Dahlonega in Lumpkin County, Ga. You will note the quartz is filled with free gold which follows the cracks, indicating that the gold and small amount of pyrite came in later. Also, you will note that the vein follows a fold in the schist.

"The Calhoun mine has some historical interest, because it is strongly claimed that the first discovery of gold by the English in Georgia was on this property and also, because it was owned for more than forty years by the famous U. S. Senator from South Carolina, John C. Calhoun, who operated it with slave labor before the Civil War. It is claimed that gold was first discovered on this property in 1828, by Benjamin Parks who was deer-hunting at the time. This discovery created much excitement and men came in from all over the country. Within a short time after it was a flourishing gold mine development, especially around Dahlonega and Auraria, leading to the almost immediate eviction of the Cherokees.

"There is a strong claim that the first gold discovery in Georgia was on Dukes Creek in White County in 1829, and there is also a similar claim that gold was first discovered in the vicinity of the old Hamilton mine in McDuffie County, not far from Thomson, Georgia.

"I sawed this slab from one owned by Captain Peyton (State Geologist), who has generously consented that I do so. It is an unusually fine sample and I doubt if it can be duplicated because the mine is not now in operation. This mine was reopened by Graham C. Dugas in November, 1939, who discovered shortly after that time a very rich section of the vein.

(See R & M, February, 1940, p. 58). I saw this bonanza at the time, where part of the vein about seven feet long and five feet high was exposed and looked to be almost half gold by weight.

"Recently Mr. Marvel L. Lynch of Laurel, Delaware, has done further work upon the vein making other rich strikes."

IDAHO: Attractive specimens of brownish petrified wood have been received from G. Elmo Shoup, Box 756, Salmon, Idaho. These specimens are from the newly discovered petrified forest in the Richardson placers at Leesburg, Lemhi Co., Idaho. (See R & M, Nov-Dec. 1950, p. 578). A letter from Mr. Shoup, dated November 7, 1950, reads "As to the petrified wood, I find that the larger chunks cut out beautifully. A California rockhound took all I had on hand but I plan on getting some more in a few days."

ILLINOIS: Another occurrence of native gold has been found in Illinois. Part of a letter dated November 16, 1950, from J. E. Farr, 5401 Webster Street, Downers Grove, Ill., reads as follows:

"You wanted me to tell you about the gold I found in Illinois. Mr. Allaway and I were down in the Mazon Creek area looking for plant fossils and we were examining the mountains of dirt from the strip coal mining operations near Coal City, Grundy County. We found that this dirt is all glacial debris and is full of fragments of all sorts of rocks and minerals as well as fossilized plants. I picked up a black rock with a vein of white quartz running through it and took it home to test out as a cutting material. In working it I broke it through the quartz vein and there were exposed a number of small nodules of gold. The black material was apparently basalt. The piece was about the size of a baseball and it was the only one we could find so it wasn't anything to start a gold rush."

INDIANA: Francis M. Hueber, 1603 Central Avenue, #115, Indianapolis 4, Ind., has sent R & M a number of attractive minerals from his State. Among them were calcite (colorless, crystallized in grayish limestone) and dolomite (brownish, crystallized on grayish limestone) and both from a railroad cut, Madison, Jefferson County; calcite, light lemon-yellow cleavages some with greenish stains of malachite, from Franks quarry, North Vernon, Jennings County; and beautiful quartz geodes from Bean Blossom, Brown County. Some of the geodes are lined with grayish botryoidal chalcedony while others with rock crystals which often are stained yellow by iron oxide. Slender black crystals of geothite coat some of the rock crystals; small crystals of magnetite were also seen on one crystal.

IOWA: Gypsum crystals and quartz crystals have been reported from Des Moines, Polk Co., Iowa. Can any of our readers verify this report and if so would they please send us some notes on the occurrence or occurrences?

KANSAS: Beautifully crystallized chalcopyrite have been found in the lead and zinc mines of Galena, Cherokee Co., Kansas.

KENTUCKY: A most interesting specimen of strontianite as a grayish coating on massive white barite, has been donated to R & M by E. H. Sarles, 2026 Elm Avenue, Norwood 12, Ohio. The specimen comes from the Lockport mine, 2 miles north of Lockport, Henry Co., Ky. The strontianite fluoresces orange under the Sylvania lamp.

LOUISIANA: Mark H. Robinson, 18 E. 41st Street, New York 17, N. Y. (also of New Orleans, La.) reports that brown and gray banded agate pebbles are quite common in the gravel found along the rivers of Louisiana. He has found nice agates in the Ouchita River, about 12 miles south of Monroe in Ouchita Parish; on the Mite River in Livingston Parish; on the Tickfaw River west of Amite in Tangipahoa Parish, and elsewhere.

MAINE: Nice masses of chalcopyrite have been found at the Blue Hill copper mine, Blue Hill, Hancock Co., Maine.

MARYLAND: Beautiful pale green foliated masses of talc have been found in the talc quarries around Dublin, Harford Co., Md.

MASSACHUSETTS: Beautiful bluish-green platy masses of cyanite have been found in Chesterfield, Hampshire Co., Mass.

MICHIGAN: In the December, 1950, issue of THE TRILOBITE, the official journal of the Wisconsin Geological Society (Conrad F. Oakland, Editor, 1868 N. 70th Street, Wauwatosa 13, Wisc.) appears the following item, on page 4, by Willis Miller:

"Visitors, tourists, amateur geologists, rock hounds, etc., should be interested in learning of a recently added attraction in the Copper Country (of Michigan.)

"Three local business men have leased a part of the Arcadian Mine and have opened up one of the tunnels for conducted tours. This enterprise, known as the Arcadian Copper Mine Tours, is located on the north side of Portage Lake about a mile east of Hancock on Highway M-26 in Ripley.

"This tunnel that has been opened to the public was started in 1939 and exploration continued until the latter part of 1943. At the same time operations ceased, four amygdaloids had been explored by 2,700 feet of drift, and approximately 23,000 pounds of copper were recovered. Small amounts of chalcocite and native silver were found. The gangue minerals are prehnite, quartz, calcite. chlorite. epidote, pumpellyite, and in a few places, datalite.

"When the mine tour is opened up next May, the operators will have constructed a building that will house a museum of mining equipment and, of course, a display of Copper Country minerals. Because the drift was started on a hillside, visitors are able to walk into the mine instead of having to be lowered in a hoist as would be necessary in most mining operations. In the tunnel the visitors will find actual mining conditions, as carried on in any copper mine of this area and will see copper en situ.

"This is not just a money-making tourist attraction, but a genuine effort to provide an interesting, educational conducted mine tour of the country's main industry, copper mining. In my opinion, it is well worth the dollar admission. We understand that a special admission price may be secured for large groups. Further information about this mine tour may be secured from one of the partners, Mr. L. G. Koepel, Post Office address, Hubbell, Michigan."

MINNESOTA: Dark brown limonite concretions of various forms have been found in the city of St. Paul, Ramsey Co., Minn.

MISSISSIPPI: About 3 miles northwest of Ripley, Tippah Co., Miss., on the Troy Road, are exposures of blue sand marl along the bluffs of Owl Creek. These blue marls are highly fossiliferous and of the many fossils found the *baculites* and *scaphites* are among the finest known in America as they show a beautiful iridescent pearly luster.

MISSOURI: A letter dated September 9, 1950, from Peter Nalle, 420 "A" St., Bonne Terre, Mo., reads as follows:

"Since writing my last letter to you, the advance in the price of zinc has warranted developing and exploring some of the known zinc areas in the district. In order that your collection from the area may be kept up to date, I am sending you a sphalerite specimen (2 were sent). The dark color and fine grained texture are typical of the areas so far exposed. I have not seen any large crystals of sphalerite."

The specimens come from the Baker Shaft, Leadwood, St. Francois Co., Mo. One consists of tiny rock crystals with xled sphalerite; the other is a dark brown (almost black) finely xled sphalerite on dark gray fine grained sphalerite.

Alvin W. Kamp, 231 Elmwood Blvd., Jackson, Mo., has sent R & M a number of fine barite specimens from the Buckshot barite mine of Morgan Co., Mo. Three of the specimens are loose colorless crystals up to 2 inches long; two

others are groups of colorless barite crystals on massive white barite. Mr. Kamp has also sent in a most interesting article on the locality which we hope to print in an early issue of R & M.

MONTANA: In the Upper Cretaceous Bearpaw shale occurring at Ismay, Custer Co., Mont., very nice baculite fossils have been found. Some of these fossils are brownish in color and banded (resembling onyx) whose interiors have parallel horizontal cavities lined with brownish calcite crystals.

NEBRASKA: About 16 miles due north of Crawford in Dawes Co., Nebr., interesting chalcedony geodes are found in the Cretaceous shale which are not only large, up to 8 inches, but are filled with clear transparent selenite crystals.

NEVADA: Nice groups of "colorless" white crystals of calcite have been found near Sulphur, Humboldt Co., Nev.

NEW HAMPSHIRE: John S. Albanese, Box 536, Newark 1, N. J., has donated to R & M a most interesting andalusite (chiastolite). It is a loose, grayish crystal, about 1 inch in length, and comes from Lisbon, Grafton Co., N. H.

NEW JERSEY: Good crystals of black allanite in greenish muscovite have been found at Vernon, Sussex Co., N. J.

NEW MEXICO: Interesting groups of rock crystal have been donated to R & M by Don Alfredo, 322 Linda Vista, Las Cruces, N. Mex. The specimens come from the San Pedro mine, Golden, Santa Fe Co., N. Mex.

NEW YORK: A nice specimen (3 x 4") of xline galena with rosin-brown (rosin jack) sphalerite and tiny rock crystals, all in a thin white calcite vein in gray sandstone, was recently donated to R & M by Thomas W. Fluhr, Box 431, Downsville, N. Y. The specimen was found in one of the excavations in Downsville that is being dug for a new dam for the New York City Board of Water Supply. Downsville is in Delaware County, of southeastern New York, and the specimen sent in by Mr. Fluhr is the finest we ever saw from the County which is not known for minerals.

A letter dated November 4, 1950, from Mr. Fluhr reads as follows:

"Glad to hear that you liked the specimen. We do not find much of it; only occasional joint fillings at rare intervals. Fossil plants however are rather plentiful. I don't bother collecting them unless they have stems and leaves."

Wilbur J. Elwell, 2 Duck St., Danbury, Conn., reports two new minerals as having been found at the old iron mine at Tilly Foster, Putnam Co., N. Y. The minerals are clinozoisite and erythrite.

Ben O. Beale, Lima, N. Y., sent R & M an interesting specimen of red fossiliferous hematite (hematite replacing fossils) which came from the old abandoned iron mine at Furnaceville (near Ontario) Wayne Co., N. Y. A letter dated December 8, 1950, from Mr. Beale reads:

"The accompanying specimen is from the original Furnaceville location. This ore used to go to the blast furnace at Charlotte, N. Y., that I can just remember seeing when I was a youngster, but has been torn down many years ago."

NORTH CAROLINA: A most interesting article on the now famous tungsten mine located 3½ miles northwest of the village of Townsville, Vance Co., N. C., appears in the December, 1950, issue of COMPRESSED AIR MAGAZINE (11 Broadway, New York 4, N. Y.) The article, written by C. H. Vivian, covers pages 260-267 and is illustrated with 15 nice photos and 1 drawing (map). Huebnerite (manganese tungstate) is the chief ore of the mine but scheelite (calcium tungstate) is also present. Gangue minerals consist chiefly of quartz, fluorite and sericite, with some chalcopyrite, sphalerite, tetrahedrite, galena, pyrite, rhodochrosite, and a bismuth-bearing galena.

NORTH DAKOTA: Opalized wood, sometimes in large sections weighing hundreds of pounds, occur at New England, Hettinger Co., N. D.

OHIO: Mr. E. H. Sarles, 2026 Elm Avenue, Norwood 12, Ohio, recently donated to R & M some very nice vivianite specimens from Miranda Run, near Hamersville, Brown Co., Ohio. One specimen consisted of deep blue crystals of vivianite in dark brown agglomerated clay. Another consisted of blue earthy masses of vivianite in dark gray clay. A note with the latter specimen reads: "This was dug out from under water and was snow-white when dug but in a very few minutes it became increasingly deeper blue. I have tried to dig it out and keep it constantly under water, but the change occurs just the same. This change becomes apparent after 15 minutes. I was suspicious that light also played a part in causing the color change. The National Museum in Washington, D. C., made some experiments at my suggestion, which indicated that light did not play an important part, and ultra-violet was no more effective than ordinary light."

OKLAHOMA: Beautiful golden calcite crystals are found in the Tri-State mine, Cardin, Ottawa Co., Okla.

OREGON: Nice specimens of calcite, white in color and compact-fibrous (almost "satin spar") occur near Roberts, Crook Co., Ore.

PENNSYLVANIA: A most interesting specimen was recently donated to R & M by Mr. E. H. Sarles, 2026 Elm Avenue, Norwood 12, Ohio. A letter dated December 18, 1950, from Mr. Sarles to the Editor of R & M reads as follows:

"When you were here I gave you a small vial with some grains and possibly crystals of olivine from near Springfield, Penn. You expressed some surprise that it should have been found there. I immediately dug out some of the rock from which I had separated the olivine. It has been on the table ever since, waiting to go to you. Here it is.

"It occurs as a dike in the middle of quite a large gneiss quarry, at the corner of Baltimore Pike and Woodland Avenue (not the Woodland Avenue of Philadelphia). This corner is well known as the location of the Springfield Swimming Pool, or at least it was so located.

"You will see the olivine scattered through the mass, and sometimes it shows crystal faces, if not complete crystals. Hope it may be of some interest."

Springfield is in Delaware Co., in southeastern Pennsylvania.

RHODE ISLAND: Nice groups of milky quartz crystals have been found on Beacon Pole Hill, Cumberland Township, Providence Co., R. I.

SOUTH CAROLINA: Beautiful specimens of pyrophyllite, in large brownish radiated xline masses, were once found at Brewer's gold mine, Chesterfield Co., S. C. Perhaps with search more specimens can still be obtained.

SOUTH DAKOTA: The following letter dated December 14, 1950, was received from Felix C. Scanlon, 13 E. St. Joseph St., Rapid City, S. D.

" I was interested to see the note on the Holy Terror mine under "News on Mineral Occurrences" in the current issue (p. 603). Two hours after reading it I had a party organized and we were on our way to Keystone. However the mine has been shut down and free gold specimens are not available to rockhounds. Nice specimens of pyrite cubes in mica schist can be found though, also calcite rhombs. (See the watchman first).

"While in Keystone one would find it worth while to visit the Edison Mine, a spodumen producer. The workers there are very courteous and let you examine the equipment and machinery and pick up "spuds."

"Also in Pennington County one can find good ore specimens of tantalite at the Get In and Dig Mine."

Mr. Scanlon, of Ilion, N. Y., is a student at the S. D. School of Mines in Rapid City. The Holy Terror gold mine is located northeast of Keystone, Pennington Co., S. D.

TENNESSEE: Nice masses of white kaolin come from Athens, McMinn Co., Tenn.

TEXAS: The following note has been received from J. B. Carson, Sierra Blanca, Texas.

"In one place about 11 miles west of Sierra Blanca can be found rhombohedral and other forms of calcite which fluoresce in several colors, also chalcedony which fluoresces very brilliant green. In the same locality there are minute to 1/3 inch garnets—green, yellow, red and amber, and masses of imperfect small brown and dark red ones—but none of gem quality. Some of the yellow ones, however, have a blocky structure of the crystal faces which produce an attractive iridescence—mostly in hues of blue and green."

Sierra Blanca is in western Texas, in Hudspeth Co.

UTAH: A nice purplish mass of fluorite from Topaz Mountain, Juab Co., Utah, was donated recently to R & M by Dr. A. L. Inglesby, of Torrey, Utah.

VERMONT: Olivine, greenish masses in dark gray basalt, occurs at Thetford, Orange Co., Vt.

VIRGINIA: In the December, 1950, issue of MINERAL MINUTES of the Mineralogical Society of the District of Columbia (which meets at the U. S. National Museum in Washington), appears this item on page 4.

"The Editor had intended to use all this page to describe the long search through eight years that culminated on the morning of November 7th, when a large seam of apophyllite and dogtooth calcite was exposed by blasting at the Belmont Quarry on Goose Creek. Numerous vugs were lined with pink apophyllite xls up to 1½ by 2 inches, some sprinkled with yellow calcite xls. They are not only the largest ever found at Goose Creek but approach in size those from any other locality. And the calcite was just as unusual."

The Editor of Mineral Minutes is French Morgan, 2601 Brentwood Road, N. E., Washington 18, D. C.

Belmont Quarry is near Leesburg, Loudon Co., Va.

WASHINGTON: A nice specimen of petrified wood (2 x 6 inches, light brown limb section) from Crab Creek, Grant Co., Wash., was obtained recently from G. F. Fales, Cashmere, Wash.

WEST VIRGINIA: A rich deposit of pitchblende, the chief ore of uranium, is reported in the press as having been found in Erbacon, Webster Co., W. Va. The discovery was made last March (1950) by Ira K. Carpenter, a 60-year old farmhand, while digging a well on a 44-acre farm owned by Isaac Armentrout. The peculiar heavy black rocks uncovered by Carpenter excited his curiosity and not knowing what they might be a sample was sent to the Atomic Energy Commission, New York City, who in turn sent it to Washington, D. C., where it was identified as a piece of high-grade pitchblende. Government geologists have examined the deposit and found it to be a rich one, so rich in fact, that Carpenter is to be given the $10,000 reward offered by the Government to anyone who finds a big deposit of uranium ore, so the report continues.

The deposit on the Armentrout farm is near the top of a small hill and apparently the ore body extends some distance. Speculation runs to the trend that adjoining and nearby land and probably other parts of Webster County may have uranium deposits of sizeable amounts, and so the search is on.

ROCKS AND MINERALS is indebted to L. L. Birkheimer, Atwater, Ohio, and to J. F. Kummer, Poland, Ohio, for clip-

pings sent in on the above find. The story was seen also in several New York papers.

WISCONSIN: R. L. Hicks, 248 Highland Street, Hammond, Ind., sends in the following item:

"I have found some beautiful specimens of petrified wood along the St. Croix River near Taylors Falls (Polk Co.), Wisc. They were of good size, 1 x 2 x 6 inches."

WYOMING: John S. Albanese, Box 536, Newark 1, N. J., has donated to R & M a very nice specimen of allanite—a lustrous black mass in pegmatite. The locality for the specimen is Big Horn Mountain near Arminto, Natrona Co., Wyo.

ALASKA: Copper nuggets have been found in the streams around Fairbanks, Alaska.

AUSTRALIA: Andalusite, as small brown crystal masses in greenish fuchsite schist, occurs in Burbanks, West Australia.

BELGIAN CONGO: Bastnasite, a cerium-bearing mineral, is an ore being mined at the Karonge mine, southeast of Usumbura in Ruanda-Urundi, Belgian Congo.

BELGIUM: Ardennite, as reddish-brown xline masses in massive smoky quartz, occurs at Salm Chateau, near Ottrez, Ardennes, Belgium.

CANADA: The following item is taken from the Peekskill, N. Y. EVENING STAR, Thursday, December 14, 1950. It relates to a rich strike of pitchblende being found on the Canadian shore of Lake Superior, about 15 miles from the Michigan border.

"A geologist was browsing through an article in an 1847 edition of the AMERICAN JOURNAL OF SCIENCE. It said that large amounts of coracite, a new ore of uranium, had been located along the lake. In those days uranium was chiefly used to color glass so no one got too excited about the discovery.

"The old article by Dr. John L. Leconte described the two-inch vein of precious ore "at the face of an almost perpendicular cliff."

"The story started a race to the lake shore and now more than 300 claims have been staked along a mile-wide strip adjoining the lake although Canada offers no reward for uranium finds. Unofficial reports say the ore is running more than $2,000 a ton."

CUBA: Beautiful specimens of drusy quartz, snow-white in color and lining cavities of cellular quartz, much of which is stained by iron, are found at Madruga, Habana Province, Cuba.

EGYPT: Small black plates of biotite with aquamarine and quartz from Gebel Zabara, Egypt, have been donated to R & M by John S. Albanese, Box 536, Newark 1, N. J.

ENGLAND: Mrs. Francis E. Delaney, 37 Cliff St., Yonkers 2, N. Y., contributes the following:

"I've been interested in minerals in a mild sort of way ever since I came to America in 1946. Mr. Ted Schoen of Mt. Vernon, N. Y., got me to subscribe for R & M and I also bought the very useful booklet "How to collect minerals." (Best dollar's worth I know of these days).

"I went home to England for three months this summer and found to my horror my native heath (Hampshire) almost devoid of minerals. Not to be stymied, I collected pebbles. Would you please help me to identify some of them? I've prepared a form for your answers, and am enclosing a stamped, self-addressed envelope for your reply.

"All the specimens in the envelope come from my own garden (we have 2½ acres) at West End, about 4 miles inland from Southampton. The loose specimens come from the beach at Lee-on-the-

Solent, a small place midway between Southampton and Portsmouth.

"Thank you very much for your anticipated help. I'll be the most faithful reader R & M ever had, from now on."

The specimens from West End consisted of chalcedony (brown pebbles, also a reddish mass which may have been broken off a small boulder) and flint (dark gray pebble).

The specimens from the beach at Lee-on-the-Solent consisted of chalcedony (brownish pebbles), jasper (red pebbles), milky quartz (white pebbles stained yellowish by iron), and a loose fossil shell (white, silicified).

Howard V. Hamilton, 187A Franklin Avenue, Vandergrift, Penn., sent in the following item that was taken from the October 30, 1950 CHEMICAL AND ENGINEERING NEWS:

"Deposits of potash said to be sufficient to meet all British needs for fertilizer and industrial purposes for over a century, have been discovered in Eskdale, near Whitby, in Yorkshire, England. Test drilling made over an area of 12 square miles by Imperial Chemical Industries Ltd., fertilizer manufacturers, uncovered deposits of sylvite estimated to amount to 200 million tons of high grade potassium chloride.

"Found at a depth of about 4,000 feet, its quality is said to equal that of the famous Stassfurt salts. It has not yet been decided whether the salt can best be extracted by mining methods or by taking advantage of its great solubility in water to wash it out. Boring is also in progress at Robin Hood's Bay for Fisons Ltd., who confirm that the deposits are on quite a large scale, probably exceeding estimations."

GERMANY: The coast of Samland, Eastern Prussia, is the location of the only important amber deposit in Germany.

HAWAII: John S. Albanese, Box 536, Newark 1, N. J., has donated to R & M some small loose rock crystals which were found on Diamond Head, near Honolulu, Oahu Island, Hawaiian Islands.

INDIA: The following items are taken from the October, 1950, U. S. Bureau of Mines MINERAL TRADE NOTES, p. 49 for salt, and p. 27 for tin.

"The largest sources of salt in Pakistan are the deposits in the Salt Range in West Punjab. These are described in the publication issued by the Government in 1950, Mining Industry in Pakistan. The following is abstracted from the report:

"The salt mines in Pakistan are situated in the Salt Range, which begins near Jalapur on the right bank of the Jhelum River and from there runs due west right across the Sind Sagar Doab (the land between Jhelum and Indus Rivers), that is the Shahpur District, until it reaches the Indus. Leaving a narrow channel for the River Indus to pass through at Kalabagh, the Range crosses the Trans-Indus region in Mianwali District, where a southern branch passes through Bannu and Dera-Ismail Khan until it meets at right angles the Suleman Range in the Waziristan system of mountains. The height of the range varies from 1,500 to 5,000 feet.

"The Salt Range contains some of the richest deposits of rock salt in the world. The salt is found either cropping out in all directions or lying in strata beginning at the surface and extending downwards in deep veins. The exposures of salt marl are numerous for a distance of 134 miles having a breadth of from 4 to 5 miles. The area of salt-bearing strata is about 600 miles, in which the salt zones range from 100 to 275 feet in thickness, with an enormous quantity of the mineral.

"In the Salt Range at present, salt is being mined at Khewra, Warcha, and Kalabagh and the mines are known usually as the Khewra Salt Mines."

"Nimai Kumar Mukerjee in an article on "A Note on the Tin Deposits of India," published in the Journal of Scientific and Industrial Research, states

that occurrences of tin have been found in eight localities in Bihar and two in Bombay. Mr. Mukerjee cites all important references on tin found in Indian geological literature from 1848 to 1941.

"In Bihar, the most promising deposit is that found in the Chhakkarbandah area. Tin-tungsten ore is found a few miles north of the village. The rocks are mostly Archaean schists and gneisses intruded by pegmatite, aplite, etc. The vein containing tin has been traced for over a mile, the width ranging from a few inches to a few feet. Exploratory operations were begun in 1940, and samples from this locality showed a tin content of 1.5 percent. A vein of less than 1.8 percent tin was mined for some years after 1867 in Nurgo (or Nurunga), Hazaribagh district. A depth of 614 feet was reached. Other occurrences include cassiterite in granite at Shimratari, west of Pihra, Hazaribagh district; cassiterite in a lepidolite-bearing granite at Pihra; cassiterite in granulite at Chappatand, Hazaribagh district; lumps of cassiterite in pegmatite intruding granulite at Silli, Ranchi district; at Dhanras Pahar (Deo-Raj Estate), in Gaya district; and at Kalikapur, Singhbhum district.

"In Bombay, cassiterite occurrence with gadolinite in a tourmaline pegmatite at Hosainpura, Palanpur State, and cassiterite and copper granules in auriferous sands at Dambal Hills, Dharwar district."

IRAN: A rich deposit of lead has been discovered in Iran about 42 kilometers from Isfahan, according to press reports.

LIBYA: A most interesting item on sulfur deposits at El Agheila, Libya, has been sent in by Howard V. Hamilton, 187A Franklin Avenue, Vandergrift, Pa. The item is taken from the November, 1950, INDUSTRIAL AND ENGINEERING CHEMISTRY. The item is as follows:

"The market for African mudholes isn't exactly bullish these days. Nevertheless, quite a few knowing individuals have begun to regard a number of murky lakes in Libya with more than just fleeting speculative concern. Cause for the sudden interest: the finding, reported in the British journal, CHEMICAL AGE, that several such lakes contain sedimentary deposits of free sulfur.

"Actively engaged in the study of these lake deposits are two British scientists, K. R. Butkin and J. K. Postgate, connected with the Chemical Research Laboratory of the Department of Scientific and Industrial Research. Last May, equipped with a special desert laboratory and accompanied by a crew of Arabs, the Britishers tracked down a body of water of almost legendary characteristics. Near the Libyan town of El Agheila, close to the Mediterranean Sea, the party came within sight of a spectacularly vivid lake, milky blue and rimmed with a broad band of red. Once they reached the water's edge, the Arab's plunged into the lake and scooped up handfuls of yellow mud. It was sulfur!

"In an atmosphere ripe with sulfuretted hydrogen, the British scientists launched an inflated rubber dinghy and paddled out into the center of the lake. There they discovered that the lake bottom held an accumulation of finely divided sulfur fully 6 to 12 inches thick. In fact several other lakes in the area displayed the same phenomenon.

"These deposits are the handiwork of countless sulfate-reducing and sulfide-oxidizing bacteria. The reducing bacteria (for many years the object of detailed study because of their special talent for corroding buried pipe) are able to convert sulfates to sulfides. In turn the oxidizing bacteria, in the presence of light, transforms the sulfides to free sulfur."

SOUTH AFRICA: The following item, relative to a new diamond find, is taken from the Saturday, December 16, 1950, issue of the Peekskill, N. Y. EVENING STAR.

"The Transvaal's Premier Mine, which produced the Cullinan diamond, the world's biggest, and the famous Jonker,

has now given up a third magnificent stone.

"The new find is of perfect color, weighs 195 carats. It is worth about $168,000. It is described as blue-white and is being sold in normal trade channels. Its value is in its quality rather than its size.

"The mine was reopened this year after several years of inactivity, and the big stone was discovered in normal operations on a recovery plant grease table, or pulsator.

"The Cullinan diamond, found in 1905, was more than three times the size of any known stone. The Excelsior, 969½ carats until then was the largest. The Cullinan was purchased by the Transvaal government and presented to King Edward VII of England. It was then cut into nine large stones.

"The Jonker diamond, weighing 726 carats, was found in 1934. It was sold to an American for 150,000 pounds and divided into 12 stones, including Jonker No. 1 the largest emerald-cut diamond in existence."

SWEDEN: A large deposit of talc, believed to be the largest ever found in Sweden, was discovered recently in the Province of Skane during deep-well drilling for water.

—U. S. Bureau of Mines MINERAL TRADE NOTES, October, 1950, p. 54.

TASMANIA: A large deposit of scheelite, an ore of tungsten, was recently discovered on King Island, off the Tasmanian coast.

THAILAND: Lead ore is being mined in Thailand in the Kenburi and Lampang districts.

YUGOSLAVIA: The Yugoslav press of August 3 reports that platinum and iridium have been discovered at Veluc, near Trstenik.

—U. S. Bureau of Mines MINERAL TRADE NOTES, October, 1950, p. 25.

A VISIT TO UNCLE TOM MINE, GREENWOOD, MAINE

By C. F. MARBLE

Buckfield, Me.

In company with John Dillingham and William Townsend, of Naples, Maine, I recently visited the old mine known as the Uncle Tom and mentioned by Bastin as the Emmons mine. (1)

It was worked for feldspar in the early 20's but at present the trail is more or less grown over and not so easy to find. There is a fairly large dump and plenty of room to dig. It is easy to get amblygonite and a sort of mammillary, lepidolite (locally called ball mica) but the pollucite and pink caesium beryl formerly found there are scarce. We found green tourmaline in spodumene, rose quartz, and a little of the pollucite and the beryl, there is muscovite, biotite, quartz, microcline, and cleavelandite—and a few dendrites.

A find of special interest was one nice pocket micro—a beautiful twin crystal of cassiterite in small vug.

A little up hill from the mine we got three fine terminated black tourmalines, about 2 x 3 inches.

Our mineral specimens could only be called fair quality but it was worth the trip to be out in the hills on such a fine day so we noted the trip to be well worth while.

1. Bastin, Edson S., Geology of the pegmatites and associated rocks of Maine: U. S. Geol. Sur. Bull. 445, 1911, p. 146.

PECTOLITE—PATERSON

By W. H. HAYES
35 - 22nd St., Irvington, N. J.

This can properly be called another chapter in the history of mineral collecting around Paterson, N. J.

To those collectors and mineralogists who own or have seen pectolite in its various forms as found in the vicinity of Paterson, there is a never-ending delight in the perfection of specimens procured and in the beauty of form they assume, as well as the perfection of crystallization of the different groups which come from the various pockets and seams in the basalt ridges of the region.

Here, again, the writer would like to refer to John Obert, the old mineralogist and collector, who furnished much information and showed and described several forms, and withal probably has seen and handled as much of this mineral species as any living man.

To picture by description the pectolite in question so the reader can visualize it is not easy, but an attempt will be made to show the arrangements of crystals that make up the different forms. The orientation of the atoms must necessarily be uniform and the crystal form consistent, otherwise the mineral would not be pectolite. It is stated by Dana to be one of the earliest species to crystallize when the basaltic lava cooled, and in the course of time, as vapors and solutions moved through the deposit there occurred several varieties of alterations from normal pectolite.

Pectolite is characterized by a fibrous, or acicular crystallization, and may be found in aggregates that appear nearly massive to those in which the ends of the crystals are attached to another mineral and the prism faces not attached to each other. Some of the latter are as fine as hairs, even under magnification. Whoever gets too friendly with these needle-like crystals is almost sure to pay a penalty of getting broken crystals in his fingers.

Almost every group of crystals is radiated, even to the point of becoming almost a sphere, with the greatest diameter of the individual crystals at the outer part, where they are terminated, if terminated at all. Hemispheres composed of very slender crystals have been found on which the periphery was a mass of terminations. Contrary to other mineral species these terminations are on the larger ends, for the crystals taper toward the center of the group: and this would account for the radiated grouping. Terminated crystals only occur where there was space within a cavity or seam for such a process.

For striking beauty the pectolite that shows a very fine, lustrous satiny sheen is given first place, and this the more so when the crystals are curved in different directions. Sometimes the fractured groups show a glassy reflection, while at others they are hardly to be called lustrous, and are pure white.

Little spheres or hemispheres may be only ⅛ inch in diameter, while the largest ones may be about four inches in diameter. Another form which is rather unusual is one which in appearance resembles the tufts or groups of thomsonite or stilbite that have been found in the Paterson district.

Altered varieties of pectolite include a brown one named stevensite, a slightly purple one called manganpectolite because of its content of manganese, a soft silky-smooth-textured variety that is easily spoiled by handling, and a pink one that may have been stained by red hematite, and this one is rather uncommon.

The white satiny varieties have an added feature that has been developed in recent years, e.g. a display of beautiful yellow, orange and pink colors when activated by the rays of a long wave ultraviolet lamp. Some pieces show concentric banding of various colors, and it seems that the whiter varieties show the best fluorescence.

Associated species usually found around Paterson have been calcite, prehnite, gmelinite, apophyllite, thomsonite and heulandite.

PROJECT FOR A FUTURE

By DOROTHY L. HAYS
President of the C.I.M.S.
Rt. No. 1, Buffalo Rd., Des Moines, Iowa

The Central Iowa Mineral Society is working on a big project which promises to guarantee an interesting, worthwhile, and it hopes, valuable future for its members.

It might be well to give you an insight into our club history and the problems we have had to face, before telling you of our plans.

Our city has had a few "rock hounds" over the years, not as many as the more mineral conscious states, but we did have them. These people, for the most part, did not know each other, nor did they know how to make contact, in the city, with others who were interested in this same hobby. Their specimens were labeled when they were purchased, or they were sent to distant museums or a few of the pieces were identified by studying the very limited supply of books available at the local libraries.

About five years ago one of these stray collectors became a bit "desperate" about this situation and put her collection on display for the neighbors to view. The newspaper was informed of the plan and it decided that this might be an unusual human interest story and sent a reporter and a photographer to the scene. The resulting publicity turned, what meant to be a one day show, into a week long "open house." Many people came to see the collection, others called by phone, and letters were received from all parts of the State. A week later another collector opened his home to these interested rock lovers and, as would naturally happen, a rock club was soon born.

Our problems were a lack of good reading material in our libraries, a University which offered little or nothing in courses of earth science subjects, a lack of professional teachers and speakers on these sciences, and worst of all, a museum which had nothing except a few fossils and clays in its "rock department." The staff of the museum was well equipped for their own jobs but knew nothing about minerals.

As the club grew, the library was made conscious of its inadequacies and took steps to purchase books for our use. Drake University offered us a meeting place, free of charge, under their Community College program. The wheels began to turn for us.

Members of the Central Iowa Mineral Society attended the National Conventions of Mineral Societies in Denver, Sacramento, and Milwaukee and they visited the wonderful museums in these cities. They saw the splendid collections of minerals, gems and rocks and they realized how much help they were to the various clubs. They heard many plans at the conventions and among them one which suggested that teachers would be required to teach earth science courses in all of the schools throughout the country. The questions arose in their minds—"How could our teachers carry out these requirements when they knew so little about rocks and minerals? Where would they turn for help in identifying specimens?, and so on. The Junior club membership was growing so fast that help was already badly needed—where could we get it? Most of our Senior members were fairly new in this hobby too and they needed help. Plans began to crystallize.

Late this past summer two of the Central Iowa Mineral Society officers visited the museum and these problems were explained to the staff and the club plans were presented. First of all we asked if the club might hold an exhibit at the museum. Then, if this proved a success, could the club build up a permanent collection, based on Dana's System, for the museum? We asked nothing except cabinets, adequate lighting and a chance to prove the need for such an undertaking. The staff was amazed at our interest and readily agreed to these plans. They enthusiastically set out to do their

part.

The exhibit was set up the first of November, just before the State Teachers annual Convention was held. Two of the teachers who are club members, were put on a committee to plan the "points of interest trips" for the convention and naturally the exhibited was listed. This created so much interest and enthusiasm that by the middle of the month there had been over forty groups of school children, of all ages, in to see the exhibit. We have no way of counting the other interested people who came but the schools were "booked" ahead in order that time could be taken for the staff to answer questions and give explanations and so on. The museum has asked that we leave the exhibit for another month so that they can take care of the additional requests for "bookings" and when they are through with the exhibit, Drake University wants it. The museum staff has informed us that this has created more interest than anything which has ever been shown there. They say that it has far overreached their expectations and they have now realized the real need for a permanent collection.

One of the club members donated an entire collection of good fluorescent specimens for the permanent collection and the museum offered to purchase the necessary lighting equipment. With the beginning of the new year the club will take Dana's System, step by step, and will build up a permanent collection of minerals in that museum. As the years roll by the poor specimens will be replaced by better ones and no doubt many things will be changed. The job will be a long one because the specimens will come from the members own collections, supplimented perhaps, by club purchases as limited funds are available. As everyone knows, Iowa has very few minerals and field collecting can only be done in the more abundant fields of the other states as the members travel about the country. I think that the museum will probably be coming up with a few of the rarer specimens (from what I hear).

Yes, the going is rough and will continue to be, but I'll bet you won't find a more unselfish, hard-working, enthusiastic bunch of "rock hounds" in the country. The value we will receive will be in the lessons we learn from this job and from the "lift" we will be giving our children and our own members in their thirst for knowledge, to say nothing of all the other people who will benefit from it. Finally, there will be the wonderful fun we will have in the future.

NEW ISLAND FORMED IN RUSSIA

Press reports state that on December 4, 1950, a giant volcano emptied from the depths of the Caspian Sea and spewed up an estimated six million tons of mud, forming an island 60 miles off the coast of Baku. The island is said to be more than ½ mile long, 300 feet wide, and 18 feet above the surface of the water.

DEEPEST MINE SHAFT IN NORTH AMERICA

Number 4 shaft at Lake Shore Mines, gold producer in the Kirtland Lake District of Canada, is still the deepest mine shaft in North America. In the March-April, 1950, issue of ROCKS AND MINERALS its depth was given as 7,500 feet; its depth is now 7,850 feet, according to the December, 1950, issue of COMPRESSED AIR MAGAZINE, p. 279. It is planned to deepen it to 8,000 feet.

A NEW YEAR'S RESOLUTION

"Bigger and better" is what all must say
Whenever an "R & M" cometh their way,
"Better and bigger" ads, pages, and news,
I HEREBY RESOLVE NOT AN ISSUE TO LOSE!

(Rev.) William J. Fraser
Moosic 7, Penn.

MIAMI SOCIETY "STOLE THE SHOW"

From October 21st through the 29th, 1950, the Second International Invention and Hobby Show was held at the Miami Civic Auditorium in Miami, Florida. Miami Mineral and Gem Society had 8 booths and it can safely be said that it "Stole the Show." The attendance at the Show was in excess of 80,000; 40c admission was charged.

Henry Graves, President and one of the founders of the Miami Mineral and Gem Society, was highly enthusiastic over the attention given the Society's exhibit. In a recent letter to ROCKS AND MINERALS he writes:

"Widespread interest was shown in the hobby and it is expected that Society membership which is now 70 will be more than doubled as a result.

"Active working displays included diamond saws, a four position sphere cutting bench, three faceting machines, a complete cabochon bench and a universal lapidary set. Some 60 gems were produced at and during the Show. The equipment used was all manufactured in Miami where two plants are under production on same. If war conditions permit continued activity in this line, they will be nationally advertised when local demand is met."

A most interesting feature story on the Society's display appeared in the MIAMI SUNDAY NEWS MAGAZINE, pp. 8-9, of the Sunday, November 19, 1950, edition. It was written by Harvey Keeler and titled—"Dazzling Hobby—They take a stone, cut and polish it—out comes a gem." Not only are men and women cutting and polishing semi-precious stones down Miami way, the story informs the reader, but the hobby has even been introduced in the Ada Merritt Junior High School where academic credit is now given the students who take it. Some gems cut and polished by the students were on display at the Show. Other schools in Florida are now considering the addition of this course, and for those youngsters in Miami whose schools do not plan a lapidary course, the Gem Society plans to form a junior club.

"This gem business is a double blessing to me," one housewife is quoted in the Magazine. "Before my huband got interested in minerals I never knew where he was nights. Now he spends his evenings in his lapidary shop and before long I will be literally dripping in gems!"

Many of the local rockhounds have turned their hobby into a profitable side line, selling their finished gems to friends. Any type of workable mineral can be bought through dealers for a fraction of the value of the finished stone, as the quality of a gem stone can rarely be determined until it is finished and ready to be set.

"President Graves in commenting on the interest of the amateur gem cutters in his area, said:

"It is remarkable that so many people of this section get entangled in the clutches of this fascinating hobby as this part of Florida offers almost no material which can be worked. Yet in the last two years our membership has grown from the original 13 to 70, and about half of the total have acquired their own lapidary outfits. In almost any other section of the country field trips are taken by club members on which they gather their own saw material. The few pieces of coral which are found on Florida beaches are pretty but usually too soft to cut."

Readers living in the vicinity of Miami who may desire to join the Miami Mineral and Gem Society are urged to contact President Henry Graves, 3163 N. W. 27th Street, Miami 42, Florida.

Copies of the paper featuring the Show may be obtained from the Miami Daily News, Miami, Fla. Ask for the magazine section of the Sunday, November 19, 1950, issue.

DOCTOR OF DIVERSITY

This veteran Kentucky physician is a rockhound, painter, musician, collector of collectors' miscellany.

Versatile Dr. Warner J. Shacklette of Hodgenville, Ky., now in his 53rd year of practice, a veteran Larue County medic, has many hobbies.

At 79, Dr. Shacklette, trudging casually between his log-house office on U. S. 31-E at the entrance to Abe Lincoln's birthplace shrine near Hodgenville and his pleasant home across the highway, seems in no hurry whatsoever.

Yet he sees 10 to 20 patients a day during his five-hours-a-day, five-days-a-week schedule; then, outside hours:

1. He gathers, studies, saws, grinds, polishes and classifies rare rocks and semi-precious stones.
2. He paints pictures in oil.
3. He collects and plays on old violins.
4. He collects antique sugar bowls and cream pitchers.
5. He collects arrowheads and other Indian artifacts.
6. He collects and displays pennants and postcards.
7. He travels; in 16 years he has visited every state.
8. He reads the Bible or his Sunday-school lesson daily.
9. He teaches a class at Hodgenville Baptist Church.
10. He attends church services, missing only rarely.
11. He reads voraciously, far into the night: science, natural history, and the literature of his many hobbies.
12. He serves as County Medical Society president
13. He grows roses. And:
14. He serves as repository for scores of his friends who collect miscellaneous items such as old padlocks, pocketknives, long-handled gourds.

Dr. Shacklette leads a life of well-ordered regularity. He arises early, and after his Bible reading, he goes to breakfast. He has 2 hours of office calls in the mornings and three in the afternoons, between and after which he naps a bit, reads some and, according to the whim of the moment, indulges in one or more of his multitude of hobbies. After dinner at home, if nobody drops in, he descends to his basement and dons smock and old hat.

In that garb he can be lapidary or painter, or both which often happens. If the former role, Dr. Shacklette selects a rough gem mineral and begins working on it—sawing, grinding and polishing.

"For many years I have been a rockhound, picking up items on my travels, mostly in the West," said Dr. Shacklette recently to a reporter who interviewed him. "I have done and still do, a good deal of research in the lapidary field, and carry on a correspondence with many hobbyists. We even trade specimens and once in a while I buy something I get interested in. I have been reading a lot lately about titanium, which can be polished to look like a diamond."

With all his hobbies, Dr. Shacklette never tires of traveling and for at least once a year, he and Mrs. Shacklette hit the road for a long trip.

Dr. Shacklette was born 10 miles from Brandenburg, in Meade County, Ky., the oldest of nine children, where his farmer-father, D. R. Shacklette, wheedled a modest living from a thinning soil. His mother was Annie Warfield, whose father, Maryland-born Dr. L. W. Warfield—of the family that produced a wife for the Duke of Windsor—gave young Warner the inspiration to be a physician.

Dr. Shacklette is a member of the Rocks and Minerals Association and has been since February 17, 1939.

A most interesting article about Dr. Shacklette and his many hobbies covering 3 pages with 8 large illustrations, and written by Paul Hughes, appeared in the Sunday, November 12, 1950, issue of COURIER-JOURNAL MAGAZINE (Louisville, Ky.) All friends of Dr. Shacklette should strive to obtain a copy of this issue and learn more about his many activities.

FRANK WADE, FORMER SHS TEACHER, DIES

Frank B. Wade, 75, beloved former Shortridge High School chemistry teacher and authority on gems, died today at his home, 5241 College Avenue, Indianapolis, Ind.

At Shortridge High School since 1903, following two years' teaching at Lewis Institute, Chicago, Mr. Wade was head of the chemistry department at the school from 1910 until his retirement a year ago.

An expert on gems, Mr. Wade had cut and polished practically every kind of stone. While he was a sophomore at Connecticut Weslevan University, he first became interested in the hobby of collecting rare stones and gems. He had to miss a college football game for an all-day geology hike. But he always referred to that incident as a stroke of luck, for on that day the class discovered an old mine which contained beautiful stones.

Although his school work and writing for publications kept his hobby in the spare-time category, Mr. Wade realized enough from the sale of stones to put his two children through college.

He found rare stones in the Atlantic coastal region and once found a fine tourmaline in a snowbank 11,000 feet above sea level in Rocky Mountain National Park.

Considered an inspiration to his chemistry pupils, Mr. Wade encouraged many of them to make chemistry their career.

During World War I, he helped the old Nordyke-Marmon Co., in the purchase of industrial diamonds to tool Liberty airplane engines and supervised their mounting, which saved the government money and valuable time.

Mr. Wade was author of "Foundations of Chemistry," "Diamonds" and "Textbook on Precious Stones." The latter book is in use all over the world. He also contributed to the LONDON GEMOLOGIST, the JEWELERS CIRCULAR and ROCKS AND MINERALS. He was born at New Bedford, Mass.

A graduate of Connecticut Wesleyan University, he received his master's degree there. A fellow of the American Association for the Advancement of Science, he was a fellow and past president of the Indiana Academy of Science. For two years he was chairman of the Indiana Section of the American Chemical Society. He was a member of the First Friends Church, Mystic Tie Masonic Lodge, Scottish Rite, Psi Upsilon Fraternity, Phi Beta Kappa Fraternity and Alpha Chi Sigma Fraternity.

Funeral services will be held at Flanner & Buchanan Mortuary. Burial will be in Crown Hill Cemetery.

Survivors are the widow, Mrs. Ethel N. Wade; a son, Nicholson Wade; a daughter, Miss Lucille Wade; two grandchildren, Indianapolis; two sisters, Miss Grace E. Wade, Grand Rapids, Mich., and Mrs. Theresa White, Worcester, Mass., and a brother, Bernard Wade, New Bedford, Mass.

Joel Hadley, principal of Shortridge High School, said, in tribute: "Mr. Wade was an excellent teacher and influenced the lives of many of the students and others in the school by encouraging them to go on with their college plans. He was influential in obtaining scholarships for many of the graduates, and he helped boys to get employment in the laboratories of Indianapolis. He was a remarkable man in every respect, not only as a teacher but as a friend to his students. He never forgot his 'boys' who were interested in chemistry."

—Indianapolis News
Tuesday, October 3, 1950

PEGGY M. KELLEY FEATURED IN MAGAZINE

How a rock can change your life is described in the January issue of Profitable Hobbies Magazine, published in Kansas City. The story deals with Peggy M. Kelley and her rock shop-museum in South Mountain Park, Phoenix, Arizona. There are descriptions of lovely visitors from a subterranean wonderland and the interesting ways in which Mrs. Kelley acquired them.

When she first began collecting rocks she said she gave them all away; and then one day she had a revelation. Perhaps it was the little azurite nodule with the velvet copper blossom, or it might have been a golden scheelite crystal glowing in the dark. At any rate Mrs. Kelley tells you what a revelation is and how the study of minerals and crystals can change your thinking. She also describes a visit of the Rocky Mountain Federation to Phoenix, and humorous as well as human interest incidents peculiar to rock collectors.

The Kelleys live in South Mountain Park, the largest desert municipal park in the world. Stone artifacts tell of an ancient people who lived there in the prehistoric ages before the white man came. Peggy's husband, A. Russell Kelley, is park manager and archeologist.

The article is by Ida Smith, who has written of minerals and their collectors for the past several years. A group of unusual photographs illustrating the story were taken by Pete Ferguson of Phoenix.

WILL PENNSYLVANIA PRODUCE ANOTHER CORNWALL?

The mysterious operations that has excited the residents around Morgantown, Berks County, Pennsylvania, has finally been solved with the announcement that a 3,000,000 ton deposit of magnetite has been discovered. It has been suggested that an 18 inch pilot shaft may be sunk, in the Spring of 1951, as a guide for a main shaft.

The mystery started about May 11, 1949, with an unknown party buying many acres of land and doing test drilling in the area at night. Rumors were rampant that the site was a deposit of uranium, the new extention of the Pennsylvania Turnpike would be using the land, wealthy sportsmen were turning it into a game preserve and many other reports of like nature. The uranium rumor seemed to be the most popular since an airplane was seen to circle the spot with, what was taken to be a Geiger counter trailing after it.

Finally an announcement was made that the Bethlehem Steel Company had recently purchased about 1,750 acres of farm land in this area and that a large deposit of iron ore has been discovered.

In the past this section has produced many famous mines, as the French Creek Mine, Jones Mine, Kinney Mine and the Warwick Mine. The hope is expressed that this development will yield another Cornwall, as in Lebanon County, or another French Creek Mine as in Chester County, with their many minerals.

L. J. Duersmith
Franklin and Marshall
College Museum
Lancaster, Penn.

'EASTERN PROSPECTOR' PLANS TO WORK ABANDONED MERRYALL MINE

Mining, an industry that has been dead in New Milford, Conn., for 60 years, will be carried on anew here starting within the next week or ten days.

Those are the plans of Howard J. Hewitt of Paterson, N. J., who has a most original occupation—that of a prospector in the eastern U. S.

Mr. Hewitt disclosed that he has obtained a five-year lease on the old Eureka mine in Merryall district, owned by Jacob Orzech and showed orders he has from several firms for mica and other minerals which he said are contained in the mine.

The old Eureka pit, once operated by the Eureka Mining and Milling company, is a surface mine consisting mainly of two excavations, one 75 by 100 feet and the other slightly smaller.

The Eureka mine is 5 miles north of New Milford, in western Connecticut.

Mr. Hewitt, who has been written about in metropolitan newspapers, is a short, stocky gentleman whose interest and knowledge of minerals are readily apparent soon after he begins talking to you.

He is a prospector who specializes in reclaiming old mines and he is pretty enthusiastic about the possibilities of the mine here. "We'll start slow at first," he disclosed. "I'll probably have a few men come up from New Jersey and maybe find a few more around here to start things going. What we do later on will be determined by what success we meet in our venture," he added.

According to the Connecticut Guide, put out by the W.P.A. in the 1930s, the old mica mine in Merryall was described as productive of some fine aquamarine and helidor, a small amount of gem garnets, beryl, tourmaline garnets, columbite and uraninite.

Mr. Hewitt carries with him a little black box containing a number of finished products of his discoveries. There are a beautiful oblong aquamarine stone and a finely cut beryl stone that glittered almost like a diamond, among others.

Whether mining is to return to this area in the years to come will depend on what luck the "Eastern prospector" has in his newest venture.

—Danbury, Conn., News-Times
Saturday, Oct. 21, 1950

MINERAL SHOPPERS' GUIDE

By CHARLES A. THOMAS
706 Church Street, Royersford, Pa.

Note: This department will appear in each issue to help prospective buyers select mineralogical materials which are advertised by reliable dealers whose advertisements apear steadily in these pages. Old Timers and new dealers are invited to send small samples of mineralogical specimens, small appliances, or whatever, for first-hand examination, the results of which will be paragraphed in this column. Items will be returned if requested and if sufficient return postage is sent with the material. Heretofore not advertised specimens will be examined also. Identification of specimens will not be attempted.

This is the time of year when a great many collectors put some time in with their specimens and projects indoors. It means fewer field trips and a substantial saving in wear and tear on the car. Saved money is found money. It has occurred to the M.S.G. that the winter months should be a good time for thinking about parting company with a few dollars for specimens that are unlikely to be found in the field. If you want a genuine thrill, send some of this saved money to Schortmann's Minerals, of Easthampton, Mass., and get something really worth while to help dress up that display. We will never forget the agreeable surprise we got when we sent to Schortmann's for a half-dozen radioactive minerals. They were not only of large size, but were absolutely choice and clean and fresh.

Those of us who have been collecting for years will wonder if fine, oldtime Bisbee coppers are still available. They are! Bisbee coppers are still on the list with other world localities such as Tsumeb, Africa, the Transvaal and other fine copper diggings. The Collectors Shop of Tucson, Arizona, advertises many coppers from Bisbee and elsewhere. Obviously, the place to expect good copper specimens is a copper district and the Collectors Shop is in that district. Copper specimens are beautiful. Bisbee specimens, whether for micro mounts or for the cabinet, are simply superb. It is not too late to acquire Bisbee material.

All of us cannot visit Hugh A. Ford in New York City, whose 39th mineral list appeared in the last issue of 1950 with the 40th list in this issue. We can, however, visit him via the mail and trust Mr. Ford to select specimens for you as discriminatingly as you would yourself. Mr. Ford deserves a great deal of applause for his knowledge of minerals and his ability to acquire them for you. The M.S.G. would like to know Mr. Ford's secret . . . not to start in competition with him, but we are naturally nosey For instance, whence cometh the Wheatley Mines pyromorphite? Those of us who have visited the Wheatley Mines recently (the mines are within five miles of the writer's home) will know what I mean. Mr. Ford's specimens are first class and, may we say, for peanuts?

Cabochon polishers often hesitate to make the big step . . . faceting. The B & I Manufacturing Company, Burlington, Wisconsin, most certainly can make the step to faceting much easier. Their gem facetor for horizontal laps are a mere $15.00 F.O.B. Burlington, Wisconsin. If you have no gem equipment to start with, their Gem Maker set is complete without motor and belt for only $29.50. What a start for those who have not yet tried gem making! Excellent pictures and description of these neat outfits are shown in ROCKS AND MINERALS.

Note Cal Gettings ads in recent issues. He calls for fluorite in a loud voice and you may believe this column when it says that he will send exceptional material in exchange. Cal sells, buys and exchanges

in fluorite. His Ohio fluorite crystals are superb, gemmy, choice groups in cavities in Silurian limestone. Those on the shelves of the M.S.G. are exquisite and nearly every specimen shows a different reaction under various U. V. lamps. Many of Cal's fluorite specimens include the very interesting bladed celestite. Why not get busy and contact Cal? You may have a duplicate other than Ohio fluorite. Cal Gettings, of 2001 Starr Avenue, Toledo 5, Ohio, is one of the most active and successful collectors in the U. S.

There really is something new under the sun. Dave Harris, the agate man of El Paso, Texas, whose ad appears in this issue, is offering at a ridiculously low price, the most unusual groups of true color photographic 2 x 2 slides imaginable. Mr. Harris is one of the first advertisers to take advantage of this new column by sending the M.S.G. a group of superb slides for first-hand examination. We have seen actual thin slices of gorgeous agates made into lamp shades but Mr. Harris has evolved a much more practical thing. Never, have we seen such beautifully reproduced color slides of sliced and polished minerals! The colors and clarity are real, yet unbelievable, unless one has seen the actual thin slices from which these slides were made. Individuals, who own small slide view boxes or the conventional projection equipment, or colleges and mineral societies should hurry to avail themselves of this most generous and most unusual offer. One slide alone, is worth the money Mr. Harris asks for six. The best agate specimens from up and down the land, are used for these slides. All Ohs and Ahs you will hear when you show these slides will be free with each order . . . and we are not kidding. The slides are so beautiful!

OLD GERMAN LEAD-ZINC MINES GET U.S. AID

Washington, December 21, 1950—One of Germany's largest lead and zinc ore producing areas, mined as early as the 13th century, will be further developed with the aid of Marshall Plan counterpart funds.

The Economic Cooperation Administration said today it has advanced the equivalent of $573,812 from its special five percent counterpart fund to the Stolberger Zinc Mining and Smelting Corporation in Maubach to boost output of these strategic metals.

The firm will repay ECA over a period of five years in shipments of lead and/or zinc to the United States stockpile. Deliveries will begin in 1951.

The project will afford Germany an opportunity to expand her lead exports to other Marshall Plan countries, and will reduce Germany's zinc imports from hard currency areas.

The Maubach mine, situated in the southwest part of Kreis Dueren, Rheinland, lies on the northern slope of the Eifel Mountains. The area was mined as early as the 13th century, and the Maubach property has been in intermittent operation since 1862. Average grade of Maubach ore is estimated to be three percent lead and two percent zinc.

A two-phase program has been planned for the exploitation of the lead and zinc deposits, currently estimated at 28 million tons. The first phase calls for construction of a 400-ton pilot mill which will be operated for about three years. During this period, ore dressing processes will be perfected and the mine developed to produce 3,000 metric tons of ore per day. The counterpart fund advance will help to finance the first phase, total cost of which has been estimated at 8,500,000 duetsche marks (about $2 million).

During the first phase, the company will produce at the rate of 400 metric tons of ore per day, yielding 1,600 metric tons of lead and 1,050 metric tons of zinc per year.

The project is in line with the policy of the non-ferrous metals committee of the Organization for European Economic Cooperation (OEEC) which is anxious to increase production of non-ferrous metals, concentrates and ores in all Marshall Plan countries.

THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Due to the keen interest in sand, as evidenced by many of our readers, we believe a column devoted to this subject is in order. This column will be run regularly, if readers will support it with notes.

Black Sands Of Port Kent, N. Y.

Along the western shore of Lake Champlain and especially around the little village of Port Kent, magnetite sand extends for some distance. On Sunday, September 17, 1950, the conductor of this column paid a visit to the Port Kent locality in the company of R. L. Sylvester of Syracuse, N. Y., and William Ellsbury, of Keeseville, N. Y. Mr. Ellsbury is one of northern New York's most famous mineral collectors and living only a short distance from Port Kent kindly guided us to the locality. We went 1.4 miles north of the Port Kent R.R. station (Delaware and Hudson R.R.) parked the car along the railroad which here was about 10 feet above the road, scrambled over the track and on the other side was the beach—50 feet away.

It was a beautiful sandy beach—wide and very long (thousands of feet long north and south). The sand was dark gray in color, fine grained, and consisted chiefly of quartz (colorless, brownish, milky, reddish, smoky), basanite (black), garnet (red), and magnetite (black).

Along the very top or edge of the beach (west end) where it ran into the bank, was a wide layer of black sand that was ½ inch thick and which extended for a long distance—probably the full length of the beach. This black sand consisted chiefly of magnetite (black) with some garnet (red).

Port Kent is at the extreme northeastern tip of Essex County, on Lake Champlain.

On Sunday, November 12th, while returning to Peekskill, N. Y., from a visit to Plattsburg, N. Y. (via the Delaware and Hudson R. R.) the train followed the west shore of Lake Champlain for many miles. For the first 25 miles or so the train was moving slowly, so slowly in fact that on approaching Port Kent I could easily spot the black sand (only 50 feet away in many places)—these black sands seemed to extend for some miles, if I judged the distance correctly.

Some Sands From The Canal Zone

Frank Wagner, Box 383, Cocoli, C. Z., has donated some sands from the Canal Zone (Atlantic end). One sample, from the mouth of the Chagres River (Carribbean Sea), is a dark gray to brown coarse sand consisting of quartz (smoky, red ferruginous, rock crystal, gray chalcedony), red hematite, magnetite (black), coral, shells, and various rocks.

A sample from the beach near the city of Colon is a dark green, very fine and lustrous sand. It consists of about 95% dark green gemmy olivine.

The 3rd and last sample was obtained from the Gatuncillo River near Colon. It is a dark brown coarse sand and consists of olivine (green and glassy), chalcedony (white), obsidian (black, lustrous), magnetite (black), and various rocks.

Some Sands From Hawaii

Francis M. Hueber, 1603 Central No. 115, Indianapolis 4, Ind., has donated two samples of sand from the Hawaiian Islands. One sample comes from Makapuu Beach, Island of Hawaii. It is a coarse grained greenish sand speckled with white and consists of greenish gemmy olivine and white chalcedony. Some of the olivine is very dark green (almost black).

The other sample is a little finer grained than the first but is black in color. It comes from the beach near Kalapano, east coast of the Island of Hawaii. This black sand consists almost entirely of very dark green—brownish green (almost black) olivine.

Sands of the French Creek Area

The following item comes from Charles A. Thomas, 706 Church St., Rogersford, Pa.

"Collectors who are interested in micro-crystals, sooner or later get around to investigating sands from near and far localities. Gold may be the lure, but usually it is the varied assortment of the durable crystals such as zircon, titanite and others, which intrigue the sand collector. Small streams which flow into the French Creek, in Chester County, Penn., contain sand-bars well worth looking into via samples under the microscope. The almost usual amethyst, the slightly worn quartz crystals, rough bits of rose quartz, epidote, garnet, titanomagnetite and magnetite, dark brown translucent and dark green translucent fragments of undetermined durable crystals, zircons of fine shape and luster, pale olivine-like bits, show up under the low power scope. An occasional tiny particle-sized bit of gold may come to view on the side of a rough quartz crystal may prove the musty age-old rumors of gold in the French Creek hills. The writer selected sand with the above minerals from a tiny streamlet about a half mile upstream from Wilson's Corners on the French Creek The most unusual tiny fragment was a glistening irregularly shaped bit of canary-yellow mineral which may or may not be xenotime since the sand contains zircons in various shades. The tiny fragment was crushed with light pressure of a needle and its irregular granular form compared with known xenotime fragments. Some of the very tiny zircons may be seen to fluoresce slightly under short wave U. V.

"I like to use a very narrow strip of gummed white paper onto which a thin trail of sand is glued, for microscopic examination. Four inch strips of the paper tape are first glued to a strip of wood similar to a popsicle stick, tongue-depressor or gardener's wooden marker sticks, with the gummed side of the paper up. After the sand is washed or 'panned' (as preferred) and dried, the specimen sand is spread into the bottom of a box-lid and is then transferred to the slightly moistened gummed paper. The Scotch Tape manufacturers make a very narrow special purpose almost white paper gummed tape which is ideal for this purpose. This tape need not be moistened with water, thus keeping the micro-crystals as nearly chemically clean as possible . . . a welcome idea for mounting micro-Herkimer "diamonds." It is not known at present, if a black tape of similar adhesive properties is available. The foregoing is just another way to mount sand for quick, time-saving and easy examination. Some sand collectors still prefer looking at sand samples in tiny bottles where they will remain free of dust. For 'scope examination these bottles may be placed directly under the lenses. Others like to use black plastic covered thumbtacks for mounting special sands and Herkimer "diamonds." Mr. Zodac has stirred up something. I hope he gets lots of sand samples thrown his way."

U. S. BUYS MADAGASCAR MICA

Washington, December 1, 1950—The first Marshall Plan purchase of Madagascar mica, a United States stockpiling item, was announced today by the Economic Co-operation Administration.

ECA said it has bought 150 metric tons of phlogopite mica from Syndicat du Mica de Madagascar with its five percent portion of French counterpart funds—francs deposited by France to match ECA dollar grants.

Amber-colored phlogopite mica is the only substance which can be used as an insulator in certain forms of electrical and electronics equipment and appliances. It also is essential in the manufacture of aviation spark plugs, marine compass dials, radio condenser films, and bridges in radio tubes.

Madagascar, India and Canada are the world's main sources for this strategic material. In Madagascar, where current production amounts to about 600 tons of splittings and blocks annually, many of the phlogopite mines have been able to boost output by installing Marshall Plan-financed machinery.

COLLECTOR'S COLUMN

Conducted by A. CAL LECTOR

This column, designed to be a help to beginners in mineralogy, began with the Sept-Oct., 1948, issue. In the last issue chrysocolla was discussed. This time we will study cinnabar, the only common mineral of mercury, and, except in rare cases, the only source of the metal. What collector has not been impressed by the behavior of mercury in a thermometer.

Cinnabar

Cinnabar, as well as the metal mercury, dates back to ancient times. Aristotle spoke of mercury—liquid silver—about 320 B.C. Around 300 B.C., Theophrastus wrote that mercury could be obtained by rubbing native cinnabar with vinegar in a copper mortar with a copper pestle. The name cinnabar is supposed to have come from India. The Latin name for cinnabar —minium—is now used for red lead, once used to adulterate cinnabar.

Cinnabar, a sulfide of mercury, is a heavy mineral. It is cochineal red, but often brownish-red to lead-gray. A scarlet streak is produced by the powdered mineral. It occurs massive, earthy, and as thick tabular or acicular prismatic crystals. Veins and masses in sedimentary rocks represent the most common sources.

Cinnabar is found in widely separated places over the world. Russian Turkestan mines have produced it for a thousand years. Idria, Gorizia, Italy has been an important source since ancient times. Russia, Germany, Peru, Dutch Guiana and Mexico have all furnished interesting occurrences. Large twinned crystals have come from Kweichow and Hunan provinces of China. The mines of Mount Avala, near Belgrade, Yugoslavia are famous for their fine crystals. The most important cinnabar deposit in the world is at Almaden, Cuidad Real, Spain.

There are a number of localities in the United States for cinnabar. The most important are at New Almaden, Santa Clara County and New Idria, San Benito County, both in California. At Terlingua, Texas, cinnabar occurs in calcite veins with some of the rare mercury minerals. Cinnabar has also been found in Utah, Oregon, Nevada, and Arkansas.

If your collection lacks a good specimen of cinnabar, contact your favorite dealer. He will be glad to locate one for you.

U. S. TO GET DIAMONDS FROM FRENCH EQUATORIAL AFRICA

Washington, December 6, 1950—A new source of industrial diamonds for U. S. stockpiling may be developed under a Marshall Plan project in French Equatorial Africa.

The Economic Cooperation Administration said today it has advanced the equivalent of $400.000 in foreign currency counterpart funds to the Upper Sanga Diamond and Gold Company for the exploration and deve'opment of industrial diamonds in the middle Congo and Oubanghi-Chari territories, involving about 2.500 square miles on the eastern bank of the Sanga River between Nola and Ouesso.

Depending on the success of the exploration, the firm will repay ECA in shipments of industrial diamonds for U. S. stockpiling. Shortage of this strategic item was so severe during one period of World War II that gem-quality diamonds were used for industrial purposes.

The Upper Sanga Diamond and Gold Company is a subsidiary of Compagnie Miniere de L'Oubanghi Oriental (CMOO), which also operates in French Equatorial Africa and currently is developing its diamond fields with the aid of $500,000 and 385,310,000 francs in Marshall Plan funds.

BIBLIOGRAPHICAL NOTES

Conservation of Natural Resources. Editor, Guy-Harold Smith.

America is a rich nation. Its great natural resources as minerals, forests, water supply, seafood, rich soil, extensive pasture land, etc., are known to every citizen.

Abundantly supplied as we are with huge natural resources which have made America the richest and most prosperous nation on earth, these resources will eventually decline and may even become exhausted if we do not in the meantime prepare to counteract the catastrophe with some methods of conserving them.

In *Conservation of Natural Resources* 20 men, all leaders in their respective fields, review the history of America's natural resources and they tell what can be done to develope a successful conservation program. This is a most commendable publication and should be read by every thoughtful American who loves his country and thinks of its future.

The book is 7½ x 9¾ inches in size, contains 552 pages with many illustrations, and priced at $6.00.

Published by John Wiley & Sons, Inc., 440 4th Avenue, New York 16, N. Y.

Arizona Zinc and Lead Deposits—Part I.

Arizona is a great mining state and though mineral collectors are more familiar with the many and varied minerals produced by the copper and gold mines especially, it is not surprising to hear that the State has also large zinc and lead deposits. Arizona ranked 5th in zinc and 4th in lead production within the United States for 1946, and 2nd in zinc for 1949.

The report contains 11 chapters, each prepared by a different author—144 pages, 45 figures (which include a number of maps and sections as a special supplement).

Published as Bull. No. 156 by the Arizona Bureau of Mines, Tucson, Ariz. Price $1.25 (free to resident of Arizona).

A Survey of Weathering Processes and Products, by Parry Reiche.

This paper attempts a brief review of rock weathering and soil formation.

All rocks that have been exposed to the weather for many millions of years have a weathered appearance on their surfaces, some more so than others. Some rocks have weathered so much that they can be pulled apart by the fingers; others have been so reduced as to form beds or pockets of "sand" in which larger fragments of the original rock may still be present. And still other rocks have been entirely removed, by streams for example, and redeposited miles away in the form of silt, sand, gravel, etc.

The above bulletin contains 95 pages, 5 figures and is published by the University of New Mexico Press, Albuquerque, N. Mex. Price $1.00.

Lake Superior Agate, by T. C. Vanasse.

This is a very interesting publication, nicely printed and with many good illustrations—43 of them—of various types of agates. Unfortunately the title—Lake Superior Agate—is a misleading one; a suggested title—A Discussion on Some Varieties of Agate—would be more appropriate.

From the title a collector would imagine that the book deals with agate localities around Lake Superior which is the largest fresh-water lake in the world with a shoreline exceeding 1,000 miles in length. The agates of Lake Superior are famous for their beauty and fine quality and there are many localities. A book listing a number of these localities, how they may be reached, describing agates found there and how they occur would be of great value to collectors. Nowhere in the book can we find even one locality listed, except in one instance—on page 61 reference is made to Priday ranch specimens but this ranch happens to be in the State of Oregon.

Then on page 68 the author states that all agates used in the material of the book, illustrations, etc., were found in Western Wisconsin, in Pierce and St. Croix counties, (at least 100 miles southwest of Lake Superior). We don't believe that collectors in Michigan and Minnesota are going to be much pleased to hear that Lake Superior agates are found, apparently, only in Pierce and St. Croix counties, Wisc.

The book contains 63 pages, 43 illustrations, and is priced at $1.50 per copy. Published by The Sun, Spring Valley, Wisc.

The Cave Book, by Charles E. Hendrix.

A delightfully interesting booklet, nicely illustrated, which describes caves, cave exploring, cave surveying and mapping, etc. It is written in simple language so that anyone can understand it.

One feature of the booklet which is especially commendable is the portion devoted to commercial caves and how they may be opened to the public. Those of us who have visited a number of commercial caves often paid scant attention to cave layout, its entrance, walks, lighting, etc. The booklet enlightens us on these many points and gives valuable hints on how a large and new cave may be discovered, explored, mapped and developed into a tourist attraction.

The book contains 68 pages, 34 illustrations and is priced at $1.00 a copy. Published by the Earth Science Publishing Co., Revere, Mass.

MARINE GEOLOGY
By P. H. Kuenen

John Wiley & Sons announced the publication in October of a new book entitled "Marine Geology," written by P. H. Kuenen.

A summary of the present knowledge and controversial problems regarding the geology of the seas, this book discusses submarine landforms and their interpretation, the structure of atolls, the processes of sedimentation and many other subjects. Because of his experience as geologist for the Snellius Deep-Sea Expedition in the Moluccas, the author pays special attention to coral reefs, submarine canyons and the Moluccan deep-sea troughs.

Professor and head of the geological department at the University of Groningen, Holland, Dr. Kuenen is currently director of the Foundation for Marine Geology at Groningen.

Published by John Wiley & Sons, Inc., 440 4th Avenue, New York 16, N. Y.

CYANIDATION AND CONCENTRATION OF GOLD AND SILVER ORES
By John V. N. Dorr and F. L. Bosqui

When John V. N. Dorr's CYANIDATION AND CONCENTRATION OF GOLD AND SILVER ORES was first published 13 years ago it was not only a milestone in the literature of mining and metallurgy, but it dramatically emphasized how far industry had advanced from an era of secrecy in which the free exchange of technical information was almost unheard of.

Now, with the able assistance of F. L. Bosqui, Mr. Dorr has completely revised his classic work, and publication of a new Second Edition has just been announced by the McGraw-Hill Book Company. Both authors are presently with The Dorr Company, an engineering organization with world-wide branches and affiliates. John V. N. Dorr is Chairman of the Board, and F. L. Bosqui is Chief Metallurgical Engineer.

The rapid growth and ultimate establishment of cyanidation as the principal method of gold recovery make this new edition particularly timely. Its comprehensive picture of ore-dressing and hydrometallurgical methods are of importance to mining engineers and operators throughout the entire field.

Operating data and methods are included, as are the flow-sheets, testing procedures, etc., needed for making use of techniques proven most productive in practical operation. In addition, this book describes many miscellaneous methods for extracting bullion, including cyanide regeneration.

CYANIDATION AND CONCENTRATION OF GOLD AND SILVER ORES is divided into two main sections. The first discusses the principal unit processes involved in gold and silver recovery, giving examples from actual practice as well as special methods recommended for the treatment of refractory ores. The second section is devoted to a description, with flow diagrams, of a number of typical treatment plants selected from the more important gold and silver mining areas in various parts of the world. A special section on costs and power consumption, and an extensive compilation of useful engineering data complete the contents of a work which should be of special reference value to operator and consultant.

Mr. Dorr gained his experience successively as chemist and operator, consulting engineer and plant designer. He was among the pioneer users of the cyanide process in the United States, and his revolutionary mechanical inventions have had a notable impact on metallurgical practice.

Mr. Bosqui has a broad background as a research engineer in all parts of the world, and is the inventor of several processes now standard in the metallurgical field.

The book is priced at $8.50. For further information contact the McGraw-Hill Book Information Service, 327 W. 41st Street, New York 18, N. Y.

BULLETIN 156, MINERAL COMMODITIES OF CALIFORNIA

Bulletin 156, prepared by the staff of the State Division of Mines under the direction of Olaf P. Jenkins, Chief of the Division, is now ready for distribution. The volume presents the geological occurrence, economic development, and utilization of California's resources, embracing more than eighty types of raw materials of commercial and strategic importance.

The book is especially documented with reference data that has definite appeal to economists, mining engineers, and to the staff members of industrial and manufacturing firms. The entire technical staff of the Division of Mines have assisted in the compilation of the volume. The latest statistical data were supplied through cooperative agreement by the U. S. Bureau of Mines; the earlier production figures being compiled from the Division's own records, and recast in the form of graphs.

An attached map shows distribution of the State's mineral deposits, major rock units, and outlines of the 58 counties and land nets. The reverse side of the map contains descriptive matter pertaining to these features, accompanied by a small map of the geomorphic provinces of the State. The concluding section contains a directory of producers of metallic and nonmetallic minerals, mineral dealers, smelters, and commercial grinding plants within the State, and also commercial assay and testing laboratories.

Embracing such a broad scope of subject-matter, Bulletin 156 will serve as an excellent college text upon economic geology. The publication cloth-bound, 445 pages, may be purchased for $2.00 including the map, or the map may be purchased separately for 50c from the California Division of Mines, Ferry Building, San Francisco 11, California.

Reviewed by J. B. Nichols

AEC PUBLISHES TECHNICAL MANUAL ON ANALYTICAL METHODS FOR DETERMINATION OF URANIUM AND THORIUM IN ORES.

The U. S. Atomic Energy Commission published on December 12, 1950, a new technical booklet describing the analytical procedures for determining the uranium and thorium content of ores.

The new booklet, entitled "Manual of Analytical Methods for the Determination of Uranium and Thorium in Their Ores," was prepared by the technical staff of the AEC's Analytical Laboratory at New Brunswick, N. J., under the direction of the Raw Materials Operations Office. It is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 20c per copy.

The new manual, which is intended principally for chemists and assayers with an understanding of chemical fundamentals, contains a compilation of the methods for the analysis of pitchblende, carnotite-bearing sandstone, shales, phosphate rock and monazite sands. It was prepared for the particular purpose of assisting and encouraging commercial laboratories, as part of their normal business, to take over gradually the function of making uranium analyses for prospectors and miners. This function is now performed largely by official laboratories of the AEC, U. S. Geological Survey and Bureau of Mines.

The analytical methods for determining the thorium content of ores as well as the uranium content are included in the booklet chiefly to enable assayers to differentiate between these two radioactive minerals.

WORLDS IN THE SKY

By CARROLL LANE FENTON and MILDRED ADAMS FENTON

Worlds in the Sky presents the fundamental facts and principles of astronomy in a manner easily understood by beginning students of science. Large print and well planned illustrations add to the pleasure of reading about our earth and its neighbors—the sun, the planets, the moon, and the stars.

The earth's movement about a star—our sun—are shown to be the cause of such phenomena as day and night, the seasons, the phases of the moon, and eclipses.

The reader is told about stars, almost beyond number, which exist in a seemingly limitless vista called space. Some of these stars are grouped together to form constellations, many of which were known to the ancients. We also read about the occasional visitors from space in the form of shooting stars or meteorites.

At the end of the text the authors have added a glossary of twenty-one important words encountered by the reader.

The book contains 96 pages and 42 blue and white illustrations by the authors and is 6½ x 8¾ inches in size. Price, $2.50 a copy. Published by The John Day Company, 62 West 45th Street, New York 19, N. Y.

COLLECTOR'S TALES

OYSTER'S MILLIONS OF YEARS OLD!

Last summer I was called back to active duty from the reserves and am now stationed at Fort Hood, Texas. I have had a very amusing experience here at Fort Hood. The whole area in this part of the country is cluttered up with well preserved fossil shells resembling oysters. They evidently weather up through the soil from a fossiliferous limestone bedrock beneath. We were all taking a break out on the drill field when one of my buddies asked me, "Where do you suppose all these little shells come from?" I replied, "Oh, those are oyster shells, they dumped them out of the mess hall." He answered, "Well of all the time I spent in the army I don't remember once having oyster stew!" He was so dead serious that I couldn't tell the poor fellow that all this hot, dry wasteland was once under water and that the little oyster shells were perhaps millions of years old. I would have been laughed at. Anyway the simple fellow became convinced that the shells were dumped out of the kitchen at some time in the past.

Don Stanley
Fort Hood, Texas
(Home address—Chicago, Ill.)

CLUB AND SOCIETY NOTES

Attention Secretaries—If you want your reports to appear in the March-April issue, they must reach us by February 15th—The Editor.

COLORADO SPRINGS MINERALOGICAL SOCIETY PROGRAM FOR 1951

January 19—Muriel Sibell Welle will give an illustrated talk on "Ghosts at Timberline."

February 9—A selection of colored slides of choice specimens in the Harvard Mineralogical Museum will be shown.

March 9—Geology students at Colorado College will tell about their personal collecting activities in the Pikes Peak region.

April 13-14—Mineral Show. Public exhibits by members of the Society in the City Auditorium.

April 29—Pikes Peak field trip.

May 11—Symposium on cleaning, preserving, labelling and cataloging of mineral specimens.

May 20—Pikes Peak field trip.

June 8—Motion pictures, all in color and sound.

July 13—Junior Members Night.

July 22—Field trip to Canon City.

August 10—"In search for oil deposits," by Harry W. Oborne.

August 19—Field trip to St. Peter's Dome.

September 14—Dr. E. L. Timmons will show colored slides of fine mineral specimens.

October 12—Demonstration on "Mineral Identification Methods" by Prof. Richard M. Pearl and others.

November 9—Annual Meeting.

Except where noted, regular monthly meetings are held at 8 p.m. on the 2nd Friday of the month in the Assembly Room of the IXL Creamery, 310 South Cascade, Colorado Springs, Colo.

ROCKY MOUNTAIN FEDERATION CONVENTION

Phoenix, Arizona—June 8-10, 1951

The time and place for the 1951 Convention of the Rocky Mountain Federation have been determined. The meetings will be held in Phoenix, College, Phoenix, Ariz., on the 8th, 9th and 10th of June.

The Mineralogical Society of Arizona, the pioneer society in Arizona, will act as host.

The Federation now includes some 28 affiliated groups with a membership of approximately 2,000. A registration of 1,000 affiliated members is expected.

Flint Hills Geology Club

A. C. Carpenter, of Ottawa, Kansas, spoke on "The Geology of Kansas" at the last meeting of the Flint Hills Geology Club of Emporia, Kansas. Using a large geologic map of the State, Mr. Carpenter explained that the oldest rocks in Kansas are the Mississippian, in the southeastern corner of the State, and the youngest are the Cretaceous, in western Kansas. Those of Lyon County, he said, are 230 millions of years old and were formed when Kansas was part of a great inland sea.

Mr. Carpenter also showed colored slides illustrating sinkholes, caves, chalk bluffs, volcanic necks and other geologic features of the State. Displaying a Geiger counter, Mr. Carpenter demonstrated how radio-active ores are detected by modern prospectors.

Mrs. W. D. Jones, Secretary
1026 Woodland Avenue
Emporia, Kan-

Southwest Mineralogists

At the November meeting of the Southwest Mineralogists we took an armchair tour of Historic Spots in California with Mrs. A. E. Allerd recounting and Mr. Allerd showing slides. Starting with the state flag and fields of poppies (the state flower) we visited Sacramento to see an early locomotive, covered wagon, and private carriage. Traveling southward along the unparalled beauty of the Redwood Highway we saw the Carson house, fields of azaleas, Mt. Shasta, Donner Lake, Ft. Ross and Mark Twain's cabin. The discovery of gold in 1848 at Sutter's Fort marked the turning point in the state's history. On through the old mining towns of Coulterville, Knights Ferry to Death Valley, Soledad Canyon, the Brea tar pits, Palm Canyon to the Missions and home.

Our usual December meeting dispensed with, all members and guests enjoying a turkey dinner prepared by Mrs. Frank Trombatore. The Triple-ettes: Joy McCaudles, Arlene Lindstrom and Louise Rich entertained with Christmas songs, old and new, and piano solos. Lacking reindeers, Gil Arnold and Florence Ingledue, in belled double harness pranced around the hall as we all sang Jingle Bells and then they played Santa as gifts, pertinent to our hobby, were exchanged.

Our January 15th meeting will feature a 45 minute film 'Ghost Towns." This has been loaned us through the courtesy of the Signal Oil Company.

B. Zehrbach, Cor. Sec.
5127 W. 118th St.
Hawthorne, Calif.

The Mineral and Gem Society Of Castro Valley

The last regular monthly membership meeting of the Society was held on Friday, November 10 in the Cafeteria of the Hayward Union High School when Vice-President Ward Lewis discussed the cutting and polishing of spheres. The following processes are involved: the cutting of the material into a cube; the further cutting off of the corners into an 18-sided object; the rough grinding into as nearly a perfect sphere as possible; the smooth grinding of the material between the ends of two pipes; and the final polishing with cerium oxide on a leather buffer. Mrs. Olive Lewis told of several one-day field trips which she and Mr. Lewis had completed recently and showed some of the material. These included some rock and mineral specimens before and after processing, bookends of Fairfield Onyx, spheres and bookends made of travertine from Puter Creek and the Knoxville Mine and specimens of Monterey jade and petrified whale bone found near Pigeon Point at low tide.

Preceding Mr. Lewis' talk Don Wills displayed examples of some of his jewelry work including necklaces, rings and pins of Chinese jade and silver and Lewis Camenzino showed examples of fossils, opal and petrified wood which he found in various parts of the West Coast area.

Further plans were made for the Society's Annual Christmas Party which will be held as a pot-luck supper on Friday, December 8, in the Cafeteria of the Hayward Union High School. President Al Breeden appointed the following members to a special committee to assist Social Chairman Dean Phillips in handling the details; Mrs. Anita Phillips, Mrs. Janice Breeden, David Coats. Bob Dexter, Mrs. Alice Robb and Mrs. Katie Sledge.

Prize awards donated by Don Wills in the form of mineral specimens from the Beach collections were given to the following members: Douglas Morra, Earl Jessen, Mrs. Gladys Luce, Jerry McFarland, Mrs. Sara Breece and Francis Vargas. The following new membership applications were received: S. A. Avery of Alameda, and Lee Woods of Castro Valley.

The date of the next Executive Board meeting was announced for Saturday, November 25 at the home of Mr. and Mrs. Ward Lewis.

December Meeting

At their last regular monthly membership meeting, Friday, December 8, in the cafeteria of the Hayward Union High School, the Society held their annual Christmas Party and pot luck supper. A total of 58 members and guests were present.

The program was opened with remarks by F. W. Buhn followed by the reciting of a poem by Lois Breece "Pass the Spaghetti, Please" and music by Mrs. Mary Buckmaster who played Christmas Carols on both the accordian and the piano. Frank Wilcox and Mrs. Alice Robb led the singing of Carols to the accompaniment of Mrs. Buckmaster after which Director Tom Robb acted as Santa Claus in the distribution of gifts in the form of mineral specimens to everyone present.

President Al Breeden appointed Ted Saling to the Field Trip Committee where he will assist Director Robb in planning future expeditions in search of minerals and cutting material.

Plans for the Party were directed by Mr. and Mrs. Dean Phillips, who were assisted by Mesdames Alice Robb and Gladys Luce in table decorations, Mesdames Olive Lewis and May Meyers who prepared the food, Bob Dexter and David Coats who set the tables and Mesdames Janice Breeden and Katie Sledge who also assisted in the general preparations for the event.

The next regular membership meeting was announced for Friday, January 12, 1951.

Arthur B. Emmes, Pub. Chm.
7845 Castro Valley Blvd.
Castro Valley, Calif.

Club In Walla Walla, Wash.

We organized a club this month with 33 member names on the charter. A good many more will be in as soon as word gets about. Think a membership of about 150 can be attained. (Club organized in November, 1950).

Anything we can do to boost ROCKS AND MINERALS will be done as it is considered a must by the rock hounds of long standing.

Deane C. Boyer
423 N. 7th Avenue
Walla Walla, Wash.

Hollywood Lapidary Society

The Hollywood Lapidary Society held its Third Annual Exhibit at Plummer Park, Hollywood, California, on October 28 and 29, under the chairmanship of Walt Shirey.

This year the society was fortunate in having two rooms, one for individual displays and the other for commercial exhibits. An anteroom accommodated the sales tables for cutting material donated by the members.

The individual displays were extremely varied. In addition to the usual cabochons, polished flats and mineral specimens, there were many fine pieces of hand-made jewelry, faceted stones, spheres and bookends. The hall was attractively decorated with floral arrangements by Jean Robinson, one of the members.

Following a policy adopted last year, no awards were made.

A large attendance both by members of other societies and by the general public was highly gratifying, and applications for membership took a sharp upward curve at the November meeting.

Margaret Harris
P. O. Box 1728
Hollywood 28, Calif.

Pacific Mineral Society

Vacations were reviewed for members of the Pacific Mineral Society at the October meeting. Harold Eales had some interesting color slides of their trip into Colorado and the Rocky Mountains section. He visited the quarry near Glenwood Springs where the white marble was mined for the tomb of the unknown soldier in Washington.

Explaining the slides about the early Indian dwellings of Mesa Verde Park, we were told how it is on a plateau covered with trees. There is a gradual slope dropping about 1500 feet in thirty miles. It is believed that the first settlers were Pueblo Indians about a thousand years ago, who were an agricultural tribe. Later a drought lasting 23 years in the late 1200's and Apache Indians drove the Pueblo Indians southward to Verde Valley.

The dwellings were built of stone and the Indians had worship rocks believing that their ancestors came from rocks, so each house had a special hole down into the earth to allow the spirits of their ancestors to enter the homes. Each room was just for sleeping space as all other duties were performed outside. The dwellings were built under the overhang of a cave roof. The sections still standing show evidence of wonderful masonary all done with the primitive tools of stone. Some of the stones for the round buildings were curved both on the inside and the outside. The average size of the doors were 25 inches by 16 inches just large enough to crawl into. The largest house visited had 200 rooms and would house about 500 people. As the Pueblo Indians migrated southward the Apaches moved in.

Mr. Allard told of their vacation in the area of Bridgeport and Virginia City. At the Occidental Mine they were escorted by the 73 year old superintendent. After a drop of 400 feet the tunnel ran straight for 1500 feet in silver-blue calcite. The areas where pockets of silver were located were indicated on the wall by numbers to indicate $7.00 a ton, or $21 to $27 a ton.

After taking in points of interest in Idaho Falls, Carson City and Boise, they traveled north to Donelli to collect smoky quartz crystals, citrine, rhodonite, iron pyrite with conchoidal fracture. Next to visit the opal mine owned by the Idaho Mineral and Gem Society. On the return trip home near Eureka they found garnet, asbestos with epidote.

Jim Underwood took his family eastward and of course wound up in the Warsaw geode area near Hamilton, Illinois. Col. Jenni made his lecture to us so interesting on that section that I believe we all have a desire to investigate and Jim made that dream come true. The geodes have a horizontal plane and with a few gentle taps will split in half showing calcite crystals in the lower half while the upper will contain quartz crystals. They form in a layer of silt above a layer of limestone and if you are fortunate enough to have a tractor handy to slice off a layer of the earth so the geodes will fall to where you are standing, that is the easy way—no digging.

Another stop made by the Underwoods was in Southern Illinois at a fluorite mine, where fluorite cubes five and six inches in diameter were found. Seems that the farmers have a side line and have small pits dug on their property where they have dug out crystals. With fluorite at $35.00 a ton it furnishes a profitable hobby for spare time.

Near Hot Springs, Arkansas, were found quartz, crystals in red clay commonly known as Arkansas "diamonds." It didn't matter if the point was chipped off a crystal as the people that bought them as a rule were just interested in having a "diamond" from Arkansas and so the natives get them out the easiest way whether it be with a crowbar or a sledge hammer. After digging them out, they give them a toss on the stock pile and if they land on top and roll down across the other crystals, it doesn't make any difference.

Dr. Foster had on display minerals from Idaho, some quartz with actinolite, garnets, epidote from Feather River Country.

What was I doing while Mrs. Bertha Royer was pondering over the writing of notes for publication? I took a "No Rock" sightseeing trip via Chicago. My first mistake was stopping in Commerce, Oklahoma, where the highway is lined with crystals about the same size as the geodes Jim tried to carry to his car. I just bought a few and that was all I was going to collect on the whole trip. Just couldn't leave South Range, Michigan, without several specimens of copper. Never having visited in Colorado before had no idea what I was getting into when I arrived at Cripple Creek and visited the Mollie Kathleen Gold mine and was then directed to a location of turquoise. You are right the car was full when I finished covering 7,000 miles.

November Meeting

Pacific Mineral Society has been awarded the placque from the convention at Trona, Calif. It is official now, the Federation placque belongs to the Pacific Mineral Society. It was first awarded in 1941 to the Los Angeles Mineralogical Society, the next temporary home between conventions was with the Mineralogical Society of Southern California. Southwest Mineral Society carried off top honors in both 1946 and 1947, then Pacific Mineral Society followed by taking top place in 1948 and 1949. At the convention in Trona in 1950 first place honors were shared by Mineralogical Society of Southern California and Pacific Mineral Society, with the final decision for the Pacific. For the benefit of those who have not seen the placque, it is about eighteen inches high with the center engraving "Perpetual Trophy California Federation of Mineralogical Societies, Best Societies." Around this are the small emblems engraved with the name of the winning society and the year it

carried top honors. At the top is a facsimile of the golden bear nugget, official emblem of the Federation.

Mr. Clarke displayed minerals including a very new mineral named Tyuyamunite from Grant, New Mexico, it is now found in commercial quantity in Utah and Colorado. Bastnasite from Clark Mountain near Mountain Pass in San Bernardino County, Calif., a fluocarbonate of the rare earths, including cerium, lanthanum, thorium, neodymium and praseodymium, a radioactive mineral. A large scheelite crystal about four inches high from the Consolidated Tungsten Mine at Dinuba, California. A most interesting specimen on display contained bastnasite, barite, siderite, hematite and quartz all in crystal formation.

Speaker for the evening was Mr. Lloyd Pray who is assistant to Dr. D. Foster Hewitt, special scientist of the U. S. Geological Survey and associated in the investigation of radioactive minerals in the southwest and the Atomic Energy Commission. Letters were read from the two prospectors who discovered the location at Mountain Pass, Mr. Herbert Woodward and Mr. Clarence Watkins, who actually discovered the deposit with the Geiger equipment furnished by Pop Simon. This is possibly the first instance in the Southwest of any commercial deposit being discovered by the use of the Geiger counter.

Dr. Hewitt gave a preliminary talk before introducing Mr. Pray mentioning that bastnasite was found in Sweden 75 years ago and named for the town of Bastnas. It is creamish, light brown and some low grade has been found in New Mexico.

Mr. Pray carried on from there telling about the Mountain Pass location just two miles from the highway near Goodsprings, Nevada. One of the color slides used to illustrate the talk showed the special equipped car with Geiger counter equipment on top of the car. This equipment makes it possible to drive across the desert and any deposit may be noted on the dial. The bastnasite in this location is found in the pre-cambrian metamorphic sediments.

The veins in this area contain many mineral combinations, calcite, barite and bastnasite; iron carbonate and barite; bastnasite and quartz; ankerite and barite quartz; ankerite and fluorite; and quartz veins.

The minerals that were last to crystallize contain the rare earths. Another point of interest is that 1/10th of 1% of rare earth minerals register on a Geiger counter but would not be high enough per-centage to be of commercial value.

December Meeting

Santa remembers Pacific Mineral Society members at the December meeting. The tables were decorated with Christmas colors of flowers and berries. Mrs. Ingledue certainly can be counted upon to furnish decorations that were original and quite different. The Christmas tree was made of plastic wire decorated with tree ornaments and lights. Santa's gifts were beautiful with hand gilded sprays and bright ribbons. Santa's helpers were Mr. and Mrs. Harold Eales and their daughter. Typical of a mineral society was the scene on the speaker's table of a snow covered desert of cactus and mineral specimens even to the waterhole and sandstone donkey. There were about sixty present and Santa Jack Lasley delivered each present in person accompanied by the jingle of sleigh bells. The contents were minerals from many countries of the world.

Extremely good listening was the music of "Smoky Dakota and his Cactus Ramblers." I do hope that Santa's package to one of the entertainers included his "two front teeth."

Mrs. R. J. Wilson showed colored slides taken on field trips some on the trip to Death Valley last New Year's which was a good build up for the trip to the same area this New Year's. Other slides were of old timers of the desert area. Seldom Seen Slim the Mayor of Ballarat the ghost town (he is also the only person living in the town). Points of interest of Wild Rose Canyon including the beehives that furnished coke for smelting the minerals brought out of the Panamints in 1870.

On display were the minerals from all over the world that were to be auctioned off. Dr. Foster displayed a collection of 90 Japanese minerals that he collected in Tokyo in 1929.

As this year closes the members are preparing for new officers for the new year.

Myrtle Musselman
26327 Athena Avenue
Harbor City, Calif.

Pomona Valley Mineral Club

The regular monthly meeting of the Pomona Valley Mineral Club, Inc., was held in Room 8, Chemistry Building, Pomona College, Claremont, California, on December 12, 1950.

An extremely interesting and enlightening program, illustrated with color slides, was given by a Club Member, Mr. Fred W. Kroger, graphically portraying the ways of life of the people and describing mines he visited on a 7,000-mile jaunt through Old Mexico, as far South as Vera Cruz.

Mr. Kroger also had on display many examples of the arts and crafts of the Mexican people which included dresses, pottery, curios, leather work and many other interesting items.

Three new members were admitted to the Club.

J. LeBrun
Publicity Chairman

Los Angeles Lapidary Society

Mr. Herbert L. Monlux, well known rockhound and lecturer, entertained the Los Angeles Lapidary Society at their November meeting with color pictures taken this last summer of the Canadian Northwest. Mr. Monlux pointed out that the huge glacial formation near the Canadian Ice Fields attained a perfection of shape and beauty that no rockhound could ever achieve. His magnificent pictures concurred with his statements. Mr. Monlux is well known for his fine cabochon cutting. At present, he is developing and studying the wet sanding method. According to him wet sanding developes no heat and therefore material which otherwise may be too fragile to stand dry sanding may be cut and polished into beautiful gems. Examples of Mr. Monlux's work seen by the society evidenced the precision of shape and polish that Mr. Monlux advocates.

We cannot help mentioning again the annual two-day picnic held at the rancho of Ted and Jean Bennett in Apple Valley. Picnic Chairman, Ted Schroeder and his hard working committee put over one of the finest rockhound events of the season. The rocks found on the field trips were excellent jaspers, agate and especially the Verde Antique, a very lovely material. President Norman Cupp and his wife were the guests of honor at Bennettville, the name given to the settlement of rockhounds who camped at the Bennett Rancho. Swimming, riding, dancing, and an enormous barbecue put on by Past President Rolland Willis were but a few of the festive events. Believe it or not Lelande (Pete) Quick, past President of L.A.L.S. and also the editor of a well known lapidary publication, won a handwoven Bolivian Hammock for the bean guessing contest.

The beauty contest was won by Howard Evans and a Scotch duet by Past Pres. Archie Meiklejohn and Dr. A. E. Anderson proved to be the highlight of the evening.

The Los Angeles Lapidary Society, along with other organizations who meet at the Van Ness Playground, assisted the playground director in affording the youngsters of the area a big Halloween Party at the playground last October 30.

Remember we meet on the first Monday of the month at the Van Ness Playground, Slauson Avenue and Second Avenue, Los Angeles. Rockhounds and their friends are welcome.

December Meeting

President Norman Cupp of the Los Angeles Lapidary Society gave a very interesting account at the December meeting of a recent trip made by a number of the society members to a jade location in the northern part of the state. Those who made the trip were rewarded with a goodly portion of lovely green nephrite jade. Everyone was also rewarded with a salt water dousing—for the lure of the green gemstone tempted even the most timid to the edge of the sea. "Never turn your back on an incoming breaker," says our president. And somehow the rest of us seem to agree.

The spirit of Christmas prevailed at the December meeting and the splendid dinner arranged for by our genial hospitality chairman, Jim Ruddy, was "tops" for the season.

One of the most enjoyable events of the evening was the exchanging of gifts by the members and guests. The gifts this year consisted of slabs of some of the finest materials available.

The officers and many of the members of the society took a lot of good-natured ribbing by "The Voice" at the Christmas meeting. "The Voice" a mysterious eerie voice that seemed to come from nowhere—was brought about by the expert handling of the loud speaking system and special equipment by the two sound experts. Needless to say it was very disconcerting to those of us making reports to have "The Voice" ad lib in the middle of our report. But the rest of the society were extremely amused as well as mystified at these clever interruptions.

The traditional caroling of Christmas hymns was enjoyed by all.

The Los Angeles Society meets on the first Monday of each month. Visiting rockhounds are always welcome.

The Faceteers, a branch of the L.A.L.S., had great fun at their last meeting "pawing" through some very fine citrine, amethyst, and aquamarine brought in by member Charles Maples. Mr. Maples obtained a considerable amount of South American faceting material and made it available to this faceting group.

The Faceteers are currently collecting information in connection with every known gemstone that has been or can be faceted. This project is under the capable guidance of member A. B. Meiklejohn, mining engineer and expert gem cutter.

Each of the gemstones taken up is studied separately. The information is then catalogued in loose leaf booklets for each gem indicating its composition, crystallization and its physical properties, such as: hardness, cleavage, specific gravity, fracture, etc. Also its optical properties, such as: index of refraction, critical angle of the material, color, luster, dispersion, birefringence, pleocroism, etc., is included. A glossary of all the important terms used in describing the gems is prepared. A description of the mode of occurrence and the character of associated formations and the locality where the best material has been found.

In addition the proved angles for the main and pavillion facets are shown. The orientation of each gem is considered and the most advantageous types of cuts for a given material; the best suited laps and polishing agents are recorded. Dopping suggestions and precautions are also noted, plus the unusual characteristics of the gem. Also hints for easy and quick methods of identification are given

and all other miscellaneous information obtainable.

The Faceteers meet on the third Monday of the month at the same location as the Los Angeles Lapidary Society. Those interested in studying the art of faceting are cordially invited to attend these meetings. The address is the Van Ness Playground Auditorium, 2nd Avenue and Slauson Avenue, Los Angeles, California.

Vic Gunderson, Pub. Chm.
2152 W. 83rd Street
Los Angeles, Calif.

Mineralogical Society Of Arizona

After the three usual informal summer meetings, Mineralogical Society of Arizona got off to a good start for the year with the two meetings held in October. At the first meeting Mr. A. L. Flagg gave a short but very thorough report on the Rocky Mountain Federation meeting held in El Paso in June, 1950, and also reported that the RMF has accepted our invitation to hold the 1951 meeting in Phoenix, exact date to be announced in the near future. Mr. Flagg, who is our retiring president and has been a tireless worker since the MSA was started over fifteen years ago, was presented with a leather brief case to partly express the love and esteem in which he is held by every MSA member. A very enlightening talk about rocks and minerals 'fair dealing' was given by Mr. Fred Bitner, Executive Secretary of A. G. & M. S. Association. Mr. M. J. Benham, instructor at Phoenix College and our new president, carried his first meeting through admirably. Mrs. Russell Kelley of South Mountain Park has been named Secretary pro tem for the Rocky Mountain Federation fiscal year, in the absence of Mrs. Marie Smith who has been called to Rhode Island for an indefinite period.

At our second October meeting Mr. Paul Miller of Arizona State College, Tempe, told in easily understood detail the story of the mineral, petroleum—how being lighter than water it is gradually floated to pockets under domes of rock, or trapped as the result of geological faults in the earth—faults differ from earth cracks, which are only joints. Mr. Miller said that oil wells did not exceed 1000 feet before 1930, whereas the drilled depth has increased gradually since then until now in 1950 some of them are as much as 20,000 feet deep.

Excellent specimens of desert roses were brought to this meeting. The meetings of the MSA are held the first and third Friday evenings of each month at 8 P. M. at Assembly Hall, 1736 West Van Buren Street, Phoenix.

(Mrs.) Charlotte B. Ferris, Pub .Chm.
Rancho Noche de Paz
Route 1, Box 493
Phoenix, Ariz.

Tucson Gem & Mineral Society

At the November 21st Meeting of the Tucson Gem and Mineral Society, Mr. L. C. Halpenny, Engineer with the U.S.G.S. gave an illustrated talk on Geology and Mineralogy of Navajo Indian Reservation. Zinc and vanadium specimens were later shown and discussed by members.

On December 5, the annual election of officers was held. After which a grab-bag exchange of mineral specimens was held. New officers were, Mrs. Jean Serrano, president; Mrs. J. B. Cunningham, vice-president; and Miss Wally Thies, sec'y-treas.

On December 19, Mr. Milton Routt of the Imperial Pearl Syndicate gave an interesting talk on cultured pearls, after which Mr. Wolfson presented on behalf of the society, a heart-shaped pendant of smoky topaz which he, himself had made. Mr. Nichols, Mr. Halley and Mr. De Muth of Winnetka, Ill., then gave short talks on thomsonites and other zeolites, showing a number of beautiful polished specimens. Gifts of crystal mineral specimens from the Society were presented to the retiring officers of 1950 in appreciation of their efforts during the past year.

Visitors are cordially invited to meetings which are held the first and third Tuesdays of each month at 7:30 in Room 106, Arizona State Museum, University of Arizona Campus.

David P. Record
4400 So. Mission Road
Route 3, Box 384
Tucson, Arizona

Western Nebraska Mineral Society

The December meeting of the Western Nebraska Mineral Society was held at Chappell, Monday, December 11, 1950, having been postponed from December 4 account of storm conditions. After regular business meeting and committee work was attended to, Paul Bergstrom, who had charge of the program, gave a very enlightening demonstration on "How to Make Endsanders." A number of unusual specimens were displayed by various members present. We welcomed 3 new members into our ranks, Vic Dutton, Lee Clark and Ed Kalb—all of Chappell. Delwin Shunk of Chappell, was a guest of Paul Bergstrom. Mr. and Mrs. Emmett Soule served the luncheon, assisted by Freda Bergstrom. Gordon Brooks will have charge of the programs at the next meeting.

Our meetings are held regularly, the first Monday in each month, in the basement of the Chappell Memorial Library at 8 P. M. Anyone interested in mineralogy or lapidary craftsmanship or related sciences, are cordially invited to attend these meetings.

Gordon W. Brooks
General Delivery
Chappell, Nebr.

Keene Mineral Club

It has been quite some time since an item about the Keene Mineral Club has appeared in ROCKS AND MINERALS. The club is well along on its third year and still going strong.

The club held its second annual meeting in June at Vilas Pool, Alstead, New Hampshire. A picnic lunch was enjoyed and the business meeting followed. An election of officers was held. The new officers are:

President, Mrs. Sadie Wetherbee; Vice President, Mr. Walter Winch; Secretary, Franklin Mack; and Treasurer, Edwin Ellis.

The Club adopted a constitution and by-laws. These were drawn up by Mr. and Mrs. Julian Wetherbee and Mr. and Mrs. Walter Winch. We have also started a library for the use of club members. The city library has co-operated by buying other books suggested to it by our library committee.

Meetings held during the last winter season were well attended. The program committee did a good job securing speakers. Professor Coles and Professor Carle of Keene Teachers College spoke to us. Mr. Coles, talked on Atomic Minerals. He had a Geiger Counter on hand for the members to see. Mr. Carle's subject was the Geological Development of the Keene Area. He also showed beautiful colored slides.

Mr. Fred Nies of the Bellows Falls club gave an interesting talk on fluorescent minerals. He brought along a very good collection of minerals and several lights. Another meeting was held at the Northfield, Mass., Seminary. Our hostess was Miss Elsie Scott of the school faculty. She lectured to us on mineralogy. We also saw a fine collection of minerals.

The first field trip this summer was to Plainfield, N. H. We dug for clay stones and everyone had several to bring home. We visited an old graphite mine in Nelson, N. H. The Wetherbee's prospect at Wilmont and the Globe mine at Springfield were given a good working over.

Two field trips were made to Vermont. One trip was to Newfane and the other to Plymouth where we panned for gold. That day at Plymouth was very chilly and the water ice cold. The equipment was none too good, but two small nuggets and a few flakes were found.

This fall the club exhibited at the county fair for the third year. There was a large and varied display of specimens. The spectators showed a great deal of interest in our exhibit.

The 4th of November we began our winter season with a talk on Laboratory Tests for Minerals. Mr. Guy Burrill, Science teacher at Keene High School, was our guest speaker. He demonstrated the use of chemicals in the isolation and identification of minerals. For December we had a talk on the History and Legends of Mining in Cheshire County, New Hampshire.

If any members of other clubs are in the vicinity of Keene and would like information on the locality of some of the mines and help in finding them, we'll be happy to assist. Please contact the President, Mrs. Julian Wetherbee, 22 Wheelock Street or the secretary.

The Keene Mineral Club wishes all rockhounds happy hunting in 1951.

Franklin W. Mack, Secretary
200 Roxbury Street
Keene, New Hampshire

Chicago Rocks and Minerals Society

The Chicago Rocks and Minerals Society's annual "silent" auction was the feature of the November meeting. Each specimen or slab had its own sheet with description of article, donor and suggested starting bid with the rest of the space for names and amounts bid. The last name and bid got the specimen after an hour and a half of spirited bidding. The money received was, of course, for the Society's treasury.

Two of the Society's Junior members have recently received special notice. Jay Wollin was given 3rd place ribbon for his display—a pyritized sperifer—at the American Federation Convention in Milwaukee, Wisc., and Alan Hahn's mineral collection had an interesting write-up in The Herald, a newspaper in northwest Chicago.

The Society owns a cabinet of specimens in the club house and to make the display more interesting and varied, members have been asked to loan specimens for a period of 3 months. This will create a loan exhibition in addition to the permanent display.

December Meeting

Dr. R. M. Garrels, professor of economic geology of Northwestern University, spoke before the Chicago Rocks and Minerals Society at its December meeting on "Synthetics and their Recognition."

He mentioned four ways of telling synthetics from real gems: 1. There is almost inevitably color banding in synthetics. 2. There are inclusions in synthetics visible under magnification. 3. The bands of bubbles in synthetics almost always contain water as well as gas. 4. The edges of inclusions in synthetics are rounded but edges of natural inclusions are usually angular.

Dr. Garrels discussed the two methods of making synthetics and told how research is bringing down the cost of manufacture.

Member exhibits at the meeting included a fine collection of twenty faceted synthetics; hand-crafted jewelry; Australian opals and Lake Superior agates.

Open houses given by members for the Society and friends will be a feature of the new year.

Mrs. Clell M. Brentlinger, Pub. Chm.
339 Kenilworth Avenue
Kenilworth, Ill.

Chattanooga Rock and Mineral Club

The annual election of officers was held October 10, 1950, in the Science Bldg. University of Chattanooga, Chattanooga, Tenn., with the following results:
Mr. Hans Thurnauer, president
Mr. George C. Olmsted, vice-pres. and programs
Col. Carl M. Gevers, sec'y-Treas.
Mr. Raynard Smith, cor. sec'y
Prof. B. K. MacGaw, field trips
Col. D. N. McMillin, publicity

November Meeting

At the November 7th meeting Col. Carl M. Gevers gave a blow-by-blow account of the eruption of Vesuvius, Italy, as he saw it during the last war. People were injured by volcanic bombs; unless shoveled off, roofs caved in under the weight of lapilli, ashes, dust and heavy rain; thousands of tons had to be removed from the streets; the flash of lightning and the roar of thunder was continuous; and the lava flows were a hundred feet thick in places. Following his talk, Col. Gevers showed beautiful slides of southern Italy.

December Meeting

The December meeting was held on the 12th in the Geology Department of the University of Chattanooga. The speaker for the evening was Mr. Harold W. Smartt of the American Lava Co. This company makes high temperature and other insulators of ceramic materials and is now engaged in making insulators for jet engines and other war work. For many years the company has been the sole customer of a pyrophyllite mine in South Africa near Johannesburg. Mr. Smartt flew the entire distance to expedite shipment of this important mineral. At the mine, natives are employed. It really is more like a quarry than a mine, the mineral outcrops at about a 60° dip. The cutting of the mineral into large blocks is done by means of a special type of wire running in a sand-water mix. Pyrophyllite may be turned on a lathe or ground to powder, mixed with other materials, molded and then fired. Its shrinkage can be predicted to the thousandth of an inch. Mr. Hans Thurnauer, president of our club, is Director of Research of the American Lave Co. Mr. Smartt's address was well received and closely attended by the audience. He passed out sawed specimens of pyrophyllite as souvenirs.

George C. Olmsted, Programs
1129 James Boulevard
Signal Mountain, Tenn.

Akron Mineral Society

The Akron Mineral Society held a display of minerals, semi-precious stones, cut and polished gems, silversmith and goldsmith work at the Akron Museum of Natural History, afternoons and evenings from October 24th through 31st. There were many skillfully cut and polished plume and moss agates but the men were especially interested in the grinding and polishing demonstrations; others were fascinated by geodes, thunder eggs, Herkimer crystals, large uncut pieces of amethyst from very pale to deepest violet and natural sparkling uncut diamonds. One case was lighted by an alabaster lighthouse, while nearby was a small fireplace made of many different kinds of stones and complete with tiny hanging copper kettle. A surprise to many were the different cut and polished jades which varied from white, rose and light green to darkest green. Varieties of flint, some cut and polished, also bookends of petrified wood were shown. Visitors enjoyed the effects of fluorescent lights on some of the minerals. The exhibit was very well attended and all showed an active interest in the displays.

The officers elected last September were President Wilbur Moon of Kent, and from Akron, Vice-President Paul Ocquarone, Secretary H. C. Treese, and Treasurer Omer Fouts.

Publicity Chairman
671 Carpenter St.
Akron 10, Ohio

Maricopa Lapidary Society

The Maricopa Lapidary Society will hold its Second Annual Rock and Gem show in the Armory at 7th Avenue and West Jefferson Street, Phoenix, Arizona, Saturday and Sunday, February 17th and 18th, 1951.

J. L. Sumner, Chairman
3448 S. 9th Street
Phoenix, Ariz.

Georgia Mineral Society

Gold has been the "goal" of the Georgia Mineral Society for the past month. E. C. Boyd, formerly of Dahlonega, Ga., and Sam Knox conducted a field trip to gold-producing localities in that area on October 21. Gold dust in the pans of various members brought forth much enthusiasm.

Dr. Walter B. Jones, Alabama state geologist and honorary member of the Georgia group, was guest speaker at the November 6 meeting of the Georgia Mineral Society. His subject was "Pioneer Gold Mining in Alabama." Doctor Jones brought with him an interesting exhibit of gold nuggets from Alabama localities and coins.

Mr. William B. Pitts, beloved honorary member from San Francisco, Calif., was also a welcome visitor at the November meeting.

Dr. H. W. Straley, President of the Georgia Society, summarized plans for increasing the membership of the Georgia society to include mineral organizations in other sections of the State.

Erna L. Mason, Cor. Sec.
State Health Dept.
Atlanta, Ga.

Yavapai Gem & Mineral Society

"The world's largest and most gorgeous gem stone," said Miss Nayan F. Hartfield, describing the Bahai temple of Wilmette, Illinois, at the meeting of the Yavapai Gem and Mineral Society held Tuesday, November 7, in St. Luke's parish house, Prescott. President Roy Kuntz presided, supported by Vice-president Ray Shire, editor of The Yavapai Rockhounder, and Mrs. Richard J. Humburg, Secretary-Treasurer.

Miss Hartfield said that the temple, a nine-sided structure, was faced with quartz crystal, which gave it a very striking appearance. The dome, she added, was one of the five largest in the world.

In the construction of this unusual building, Miss Hartfield said that many architectural problems, in lighting and design had been solved. Despite very generous offers from non-members, the temple was being erected entirely by members of the Bahai faith. At present, work is in progress on the interior decoration with a view to completion in 1951.

In the creation of this beautiful "gem stone" 745 tons of quartz were required for the dome alone. The temple itself, Bahai gift to the world, is an expression in material form of spiritual power, Miss Hartfield said. That spiritual power will establish peace throughout the world.

The report of the secretary-treasurer showed a balance of $63.85 in hand. It is expected to increase the funds of the society as the outcome of a rock auction to be held at the next meeting, December 5.

Members took part in a quiz. The senior prize went to Mrs. Eugene Neuman; the junior to John Butcher. The senior door prize was won by Miss Fannie Perkins; the junior by Gary Purviance.

Arrangements for the next field trip were left in the hands of H. G. Porter, who has recently led several successful trips.

Attractive exhibitions of gem stones formed a feature of the meeting. A collection shown by Rheo Boucher, of Seattle, was much admired.

Librarian Harold Butcher announced that the Society's subscription to Desert Magazine had been renewed for two years. Two volumes (loaned by John Butcher) have been added to the library—"Outlines of Historical Geology" and "Outlines of Physical Geology." A recent acquisition was "The Nininger Collection of Meteorites," a volume dedicated to the thousands of Americans who have helped Dr. and Mrs. Nininger in building up their world-famous collection housed in the American Meteorite Museum, Winslow, Arizona.

Harold Butcher
331 Park Avenue
Prescott, Arizona

ESCONI Holds Its First Auction

About 200 people attended the first auction of the Earth Science Club of Northern Illinois and the flashy array of beautiful and rare specimens offered were amazing for both their quality and quantity. One contributor even bought back one of his own specimens at a high price much to the tongues hanging out of several other bidders who lost only because time was called. It was a museum piece!

To give a little formal character to the meeting, a talk illustrated by Kodachrome slides was given by Jay Farr on the recent trip made to London, Gloucester, Paris, Lucerne and Venice by Betty, Rosemary and himself. The formality became a little strained, however, when he threw a beautiful picture of Venus De Milo on the screen and asked the audience to notice the design in the marble floor. The design really was O. K. Some of the fine specimens offered were gathered under the guidance of Peter Zodac himself by the Farrs on their way home from Europe. These specimens included two kinds of garnet, emery, lodestone, and some of the more rarer minerals that only a few people know where to find.

J. E. Farr, Corres. Sec.
5401 Webster Street
Downers Grove, Ill.

Contra Costa Mineral & Gem Society

Under the able chairmanship of Ed. Ross, the Contra Costa Mineral and Gem Society held a Christmas party and dinner meeting at the Las Palmas Banquet room the evening of December 16th.

The speaker, Professor Robert Winston of the California College of Arts and Crafts, illustrated his talk with magnificent colored slides. Winston explained, so called, modern art and design, particularly in reference to "modern" design in jewelry, mountings and cut stones. Illustrating complete change in stone mounting and mounting design with emphasis on "mobile" stones. Faceted stones cut in odd shapes and a complete departure from the conventional, and cabachon type mostly in small spheres and moveable in the mounting.

While one may not "go along" with all of Winston's ideas on 20th century design, all most certainly will with his presentation of the subject and everyone cannot help but appreciate and enjoy his pictures. The use of the camera and colored film in portraying design in lights, nature and modern engineering, is masterful.

A. E. Davies
Box 68
Alamo, Calif.

Newark Mineralogical Society

The Newark Mineralogical Society enjoyed a treat in having A. J. Delario, M. D., of Paterson, N. J., give a very instructive talk on the use of basic minerals in medical prescriptions, industry, the arts, etc., at their November 5th meeting.

Dr. Delario had the minerals displayed in boxes and the salts, etc., in vials. Starting with aluminum he proceeded in alphabetical order through the mineral field to zinc and yttrium. In a very amusing way he compared many of the strange and superstitious beliefs held in past centuries by man and the modern treatment and use of minerals today in x-ray, radium, radio-active blood tracers, hormones, etc.

At the close of his talk, Dr. Delario distributed pamphlets embracing a large part of his talk with the history, discovery, formula and principal medicinal use of each mineral described. Dr. Delario gave credit to Mr. William Casperson, Curator of the Paterson Museum, for helping him assemble so many of the used specimens and his audience was well aware that Dr. Delario knew his minerals and subject thoroughly and went home feeling they had heard a talk which they would long remember.

Herman E. Grote, Pub. Chm.
95 Lenox Street
Newark 6, N. J.

December Meeting

At the club's 277th regular meeting on December 3rd, 1950, Mr. J. J. Hock, Jr. of Linde Air Products Co., gave a fine lecture on "American Synthetic Crystals." He discussed the original and present methods of making boules of corundum and progressed to spinel and rutile and to the corundum rod used for bearings. The methods of making star corundum was briefly outlined.

Following Mr. Hock's talk a Christmas party with refreshments and mineral presents completed a very pleasant Sunday afternoon.

Gavin P. Taylor
28 Benson Street
Bloomfield, N. J.

Chicago Lapidary Club Field Trip

On Sunday, October 29, 1950, the Chicago Lapidary Club sponsored a Field Trip to the Wilmington Strip Mines of the Northern Illinois Coal Company, south of Joliet, Illinois. The purpose of the trip was the collection of fern nodules and other fossils of the Carboniferous Age, for which this area is noted.

The Chicago Lapidary Club is proud to report that this is believed to be the biggest Field Trip held in the Mid-West, as in addition to its own members, there were members of the Marquette Geologists, Chicago Rocks and Minerals, Earth Science Club, all of Chicago, as well as members of the Joliet Mineralorists and the Wisconsin Geological Society, Milwaukee, Wisconsin, in good number. There were 63 cars present at last count, with an estimated passenger total of at least 250.

The weather was perfect—a summer day with autumn foliage everywhere, and friendly joint picnic lunches were enjoyed at the Recreation Grounds of the company employees of the Northern Illinois Coal Company. Short talks were made by Mr. M. A. McKee of the Northern Illinois Coal Company, and by Mr. Ben Hur Wilson, on the geology of the coal formation. We were also privileged to visit the home of Mr. and Mrs. John McLuckie in Coal City, who held Open House for all to view their outstanding collection of fossils from this region. We were further fortunate in being able to view some of the mammoth machinery of this form of coal mining in operation. Last, but not least, everyone went home with fossils!

In addition, it was voted to make this an annual event, to be sponsored by the various clubs each year.

Mrs. Florence M. Swan, Secretary
Chicago Lapidary Club
8249 Ellis Avenue
Chicago 19, Illinois

Brawley Gem and Mineral Society

More than 500 persons admired the thousands of exhibits displayed at the first annual show of the Brawley Gem and Mineral Society held December 2 and 3 at the high school science building. People came from Mexicali to Santa Ana, from Yuma to San Diego to view the collections of local "rock hounds."

Thirty-five individuals exhibited collections of polished and unpolished specimens, rare fossils, tiny semi-precious stones cut and polished for display and sale. The Barfell family of Brawley displayed one of the finest collections of geodes that have been found anywhere. These geodes attracted much attention because of the great variety, unusualness, and beauty.

The show was a great success and the society was well pleased with the exhibits and the cordial reception given the displays by the interested crowd of people of all ages.

The show will undoubtedly become an annual affair, but will probably be much larger in the future for more show room will be available in the future and more interest in the society was stimulated by the show.

Faye L. Williams
Brawley, Calif.

A Poor Rockhound Without R & M!

Editor R & M:

I feel that it would be impossible to be a successful "rockhound" without R & M.

A. W. Porter, President
Humboldt Gem & Min. Society
Pepperwood, Calif.

November 6, 1950

Fine Specimens for Every Collector

AMALGAM, Mexico. Pure ½" nugget in vial. $2.50

TARNOWITZITE, Tsumeb. Large white twin xls on matrix. 3x4½, $10.00.

NATIVE ARSENIC, Harz Mtns. Choice botryoidal massive with Proustite. 1x2, $3.50.

BARITE, Rumania. Transparent large plates into which are protruding terminated needles of Stibnite. Some of the Barite plates have white phantoms. 2x3x3, $12.50.

STEENSTRUPINE, Greenland. Dark brown xls in Nepheline. Rare. 1¾x2, $10.00.

CHABAZITE, Idar-Oberstein. White xls on amethyst geode. 2½", $2.00.

CHALCOPYRITE, Freiberg. Groups of built up sphenoidal xls on matrix. 1½x2½, $5.00.

SIPYLITE, Virginia. ½" pure mass in vial. $2.00.

PROUSTITE, Joachimstal. Sharp red xls on arsenic. 2x2½, $7.50.

GALENA, Harz Mtns. Fine large modified xls on matrix. 2x5, $4.00.

GALENA, Germany. Single twin (spinel type) xl. 1x1½, $2.00.

AZURITE, Tsumeb. A group of dark blue xls. 2x2, $6.50.

AZURITE, Tsumeb. Sharp blue xls with Bayldonite, Olivenite and Malachite. 1x2, $3.50.

URANINITE, Joachimstal. Rich heavy black masses. 1x2 to 2x3, $3.50, $4.00, $4.50, $5.00.

BORAX, Tibet. A 2" bottle of white xl grains. Unusual locality. $2.50.

NAGYAGITE, Transylvania. Lead-gray xls and masses on matrix. Very rare. 1x2, $7.50.

BOURNONITE, Hungary. Cogwheel xls with Galena, Pyrite, Jamesonite, Sphalarite, etc., 2x3, $5.00; 3x3, $7.50.

REALGAR, Rumania. Sharp red xls on matrix with massive realgar. 2x3½, $3.50.

CALCITE, Tsumeb. Fine, cream-colored rhombic xls on matrix. 3x5, $5.00.

TITANITE, Switzerland. Small yellow xls growing on and included in a clear Quartz xl. 2", $3.00.

EMBOLITE, New South Wales. Very fine green xllized group. 2x2, $15.00.

QUARTZ, Elba, Italy. Clear xls on white Microcline, with Tourmaline. 2x3, $2.50.

HARMOTOME, Harz Mtns. White xls on matrix. 2x2, $3.50.

HARMOTOME, Harz Mtns. A mass of white twinned xls, the extremely rare 'fourlings' from the Samson Mine. 1x2¼, $5.00.

WOLFRAMITE, Zinnwald. Sharp black terminated xls. Fine specimens. 1x1½, $4.00; 1x2, $5.00; 2x3, $10.00.

MILLERITE, Germany. Beautiful hair-like xls on Siderite, very choice. 2x3, $7.50. Tufts of brassy xls on Siderite. 2x3, $5.00.

QUARTZ, Iceland. Stalactic forms covered with tiny drusy quartz. 2x2, $1.50.

LARDERELLITE, Tuscany. Xllized on matrix, in glass bottle. 1x1½, $5.00.

ARANDISITE, So. Africa. Green massive in quartz. 1½x2½, $3.50.

COTUNNITE, Germany. Minutely xlized on galena. 1½x2½, $5.00.

VASHEGYITE, Hungary. Massive white on rock. Rare. 3x4, $5.00.

WHEWELLITE, Bohemia. White xls on matrix. 2x2, $5.00.

All specimens F.O.B. Berkeley, California. Please list alternates.

MINERALS UNLIMITED

1724 UNIVERSITY AVENUE **BERKELEY 3, CALIFORNIA**